THE

JOURNAL OF GAS LIGHTING,

WATER SUPPLY, & SANITARY IMPROVEMENT.

VOL. XI. No. 255—14th YEAR.] LONDON, JULY 29, 1862. [Subscription per Ann. 15s. in Advance, 18s Credit.] Price 8d. Unstamped.

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RAMSAY'S NEWCASTLE CANNEL has become the principal Cannel Coal used in the Metropolis. Its joint products of gas of high illuminating power, and coke of good quality, make it one of the most economical coals known. The Crystal Palace was lighted from it in 1851, and the Post-office, and *Times* Office, are at present.

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FIRE-BRICKS (marked "RAMSAY") OF ALL DESCRIPTIONS.

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Manufactory established in 1804.

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THE Directors of the Blackburn GASLIGHT COMPANY, are prepared to receive Tenders for the Purchase of all the TAR and AMMONIACAL LIQUOR to be produced at their Works, for a Term of two, three, or five years, from the 1st of January, 1863.

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COWEN'S PATENT FIRE-CLAY RETORTS.

JOSEPH COWEN and CO.,
BLAYDON BURN, NEAR NEWCASTLE-ON-TYNE,

Were the only parties to whom a PRIZE MEDAL was awarded at the GREAT EXHIBITION of 1851, for "GAS RETORTS and OTHER OBJECTS in FIRE-CLAY," and they have also been awarded in the INTERNATIONAL EXHIBITION of 1862, the PRIZE MEDAL for "GAS RETORTS, FIRE-BRICKS, &c., for EXCELLENCE of QUALITY."

J. C. and Co. have been for many years the most extensive Manufacturers of Fire-Clay Retorts in the United Kingdom; and orders for Fire-Clay Retorts of all shapes and dimensions, Fire-Bricks, and every other article in Fire-Clay, are promptly executed at their Works as above.

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ALMA WORKS,
WALSALL, STAFFORDSHIRE;
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Original Manufacturers of Wrought-Iron Gas Tubes and Holders of the present Patents; Inventors and First Makers of LAP-WELDED FLUES for Steam Boilers.

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Gun Metal, and all other kinds of Cocks, Stocks, Dies, and Taps, Galvanised Tubes, &c.

N.B. All Goods thoroughly Tested before sent out, and Warranted.

TO GAS COMPANIES.

ON SALE, by Private Treaty, at the Gas-Works, St. Helen's, Lancashire, a STATION-METER, capable of passing 7000 cubic feet per hour, with Bye-Pass, Clock, and Tell-tale.

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Apply to Mr. WILLIAM PRITCHARD, Gas Office, ST. HELEN'S.

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WILLIAM COCHRAN CARR begs most respectfully to thank the Metropolitan, Provincial, and Continental Gas Companies for their patronage for several years past, and to intimate that he has rebuilt and enlarged his extensive premises for the Manufacture of CLAY RETORTS; and that he is now prepared to execute the largest orders with punctuality and despatch. Orders for FIRE-CLAY RETORTS, of all shapes and sizes, FIRE-BRICKS, and all other Articles in Fire-Clay, executed on the shortest notice, and on the most reasonable terms.

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TO BE SOLD immediately, Gas APPARATUS capable of supplying 2000 lights. The Apparatus include Gasholder, 30 feet by 12 feet, with Columns, Girders, and Balance Weights, Hydraulic and Ascension Pipes, two Purifiers, Valves, and everything relative to the above.

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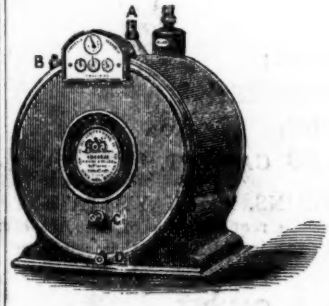
Boston, Lincolnshire, July 4, 1862.

INTERNATIONAL EXHIBITION, 1862.

Class 31, Section B, No. 6283.



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WET GAS-METER,

which works with hardly any Friction, and maintains at all times a

CORRECT REGISTRATION.

The Advantages of this Meter are illustrated and explained at the EXHIBITION by the aid of one of BISCHOFF, BROWN, and CO.'S EXPERIMENTAL GASHOLDERS and PRESSURE-GAUGES, where Price-Lists and all Particulars can be obtained; or by application at

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GEORGE STREET, GREAT PORTLAND STREET, LONDON, W.

INTERNATIONAL EXHIBITION, 1862.

Class X. No. 2265.

THE JURORS HAVE AWARDED TO

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BLAYDON BURN, NEAR NEWCASTLE-ON-TYNE,

THE PRIZE MEDAL FOR "GAS RETORTS, FIRE-BRICKS, &c., FOR

EXCELLENCE OF QUALITY."

JOSEPH COWEN & CO. were the only parties to whom a Prize Medal was awarded in the Great Exhibition of 1851 for

"GAS RETORTS AND OTHER OBJECTS IN FIRE-CLAY."

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NEAR BLACKBURN, LANCASHIRE.

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AND EVERY DESCRIPTION OF

TUBULAR GLAZED SEWERAGE PIPES, BENDS, JUNCTIONS, ETC.

FIRE-BRICKS, TILES, BLOCKS, AND CHIMNEY-TOPS.

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SELF-ACTING GAS GOVERNOR.

This Instrument, which is designed to replace the ordinary Governor,

Operates solely by the Action of the Gas, without any Alteration of Weights, or the Assistance of any intermediate Agency or Apparatus whatever;

And it will maintain a Constantly Uniform Pressure in Gas-Distributing Mains, at any given point of their circuit.

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Established 1827.

SOLE MANUFACTURERS OF

ESSON'S PATENT COMPENSATING GAS-METERS;

KAY'S PATENT HYDRAULIC VALVE GAS-METERS;

Also, DRY METERS OF THE MOST APPROVED DESCRIPTION;

All of the above being Stamped under the Provisions of the SALE OF GAS ACT.

W. and B. C. likewise supply ESSON'S PATENT COMPENSATING FOUNTAINS, and KAY'S PATENT HYDRAULIC VALVES, now so extensively used for bringing ordinary Meters within the requirements of the Act of Parliament. Gas Companies can, therefore, either attach the FOUNTAINS or VALVES to their old Meters themselves, or forward them to W. and B. C. for Alteration and Stamping.

GOVERNORS, STATION-METERS, PRESSURE-REGISTERS & GAUGES,

MINUTE-CLOCKS, PHOTOMETERS, EXPERIMENTAL METERS,

AND ALL OTHER DESCRIPTIONS OF GAS APPARATUS.

INTERNATIONAL EXHIBITION,

Class 31 (Sub-Class B), No. 6288.

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MANUFACTURER OF

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"EVANS'S" PHOTOMETERS,

Experimental Meters, Minute Clocks, &c., Station-Meters and Governors,

STREET-LAMP GOVERNORS AND LAVA BURNERS,

19 and 20, MARSHAM STREET, WESTMINSTER.

INTERNATIONAL EXHIBITION, 1862.

TWO PRIZE MEDALS.

Class 13, No. 2973.

PHOTOMETERS, &c.,

Jury Award: PRIZE MEDAL,

For "Photometric Apparatus—for a well-constructed Apparatus to determine the Illuminating Power of Coal-Gas."

(PHILOSOPHICAL INSTRUMENTS, *North Gallery.*)

Class 31, Section B, No. 6350.

METERS, GOVERNORS, &c.,

Jury Award: PRIZE MEDAL,

For "General Excellence of Workmanship, and for his Improvements in Gas-Burners and Photometrical Apparatus."

(*Opposite* AMERICAN DEPARTMENT.)

WILLIAM RICHARDS,

SOLE INVENTOR AND FIRST MANUFACTURER

OF THE

DRY GAS-METER,

Which obtained Prizes at the Exhibitions of London, 1851; New York, 1853; Paris, 1855; and three Prizes at the present Exhibition of 1862.

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W. RICHARDS invites the attention of Gas Companies and Engineers to the Dry Meter manufactured by him, as possessing advantages over others, by his method of disposing of the flexible material, so that collapsing or bagging of the same is avoided. This defect, so conspicuous in some of the meters of other makers shown at the Exhibition, causes the measurement of the instrument to vary under different circumstances, and the durability of the same is materially impaired.

In the meters manufactured by W. Richards, all the metals of the working parts are incorrodible; the flexible material, the best that can be employed; and, in general construction, they are not to be surpassed.

To those who prefer the Wet Meter, W. Richards submits his patented improvements in the same, which consist in contracting the measuring-wheel at, and near, the water-line—thus allowing of a longer range for the float, and avoiding the sudden extinctions now so common; also, a simple remedy is applied to prevent fraudulent consumption, which the operation of the Sales of Gas Act has so much facilitated.

TELL-TALE EXHAUST AND PRESSURE-INDICATORS;

GOVERNORS, STATION-METERS, &c.

WILLIAM INGHAM AND SONS,

WORTLEY FIRE-BRICK AND RETORT WORKS,

Near

Leeds.

W. INGHAM and SONS, having for many years been extensively engaged in the Manufacture of

RETORTS AND FIRE-BRICKS FROM THE CELEBRATED WORTLEY FIRE-CLAY,

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The Works are of such magnitude as to ensure the prompt execution of orders to any extent.

Estimates for Setting, or Bricklayers sent when required.

GAS OVENS IN SEGMENTS OF EQUAL QUALITY.

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N.B.—*Export orders continue to have prompt attention.*

ANOTHER

MEDAL AWARDED BY THE JURY, INTERNATIONAL EXHIBITION,

1862,

To THOMAS GLOVER,

SUFFOLK STREET, CLERKENWELL GREEN, LONDON.

THOMAS GLOVER has great pleasure in informing Gas Companies and his other Patrons, that the *Jury of Class XXXI. of the International Exhibition of* 1862 have awarded, for his Patent Dry Gas-Meter, *a Prize Medal.* The reason given for this Award, in the Juries Official Report, is, "*For excellence of manufacture, as regards Dry Meters.*" See Official Report, p. 346.

It is worthy of remark, that the only two other Firms who receive Awards *both manufacture imitations of Thomas Glover's* Patent Dry Gas-Meter, and the reason given for these Awards is "*construction* and sound workmanship." Thomas Glover, therefore, claims that the *construction* of his Meter has obtained *three Awards from the Jury of the International Exhibition of* 1862; at the same time, *contrasting* the Award granted for his Meter by the words, "*For excellence of manufacture, as regards Dry-Meters.*"

The Prize Meter will be found in Class XXXI., No. 6301, connected with a 1-foot holder, to demonstrate that a 50-light Meter *measures and indicates accurately the small quantity of One Foot.*

WILLIAM PARKINSON AND CO.

(SUCCESSORS TO SAMUEL CROSLEY),

PATENT WET AND DRY GAS-METER MANUFACTURERS, &c.

COTTAGE LANE, CITY ROAD, LONDON, E.C.

Established 1816.

PATENT IMPROVED WET METER.

W. P. and Co. invite especial attention to this Meter, which entirely overcomes the difficulty to which ordinary Wet Meters are subjected, owing to the short range of the Float, which is necessary, in order to meet the requirements of the Sale of Gas Act.

"It is well known that in Meters constructed so that the valve will close when the water is drawn off to such a point as to render them 3 per cent. slow the lights are liable to be extinguished by the closing of the valve by a sudden increase of pressure. To meet this difficulty, Mr. Pinchbeck has invented an ingenious and simple arrangement by which the action is reversed, and any such increase of pressure, in his Meter, raises the value instead of depressing it. The fact of the improvement having been adopted by Messrs. W. Parkinson and Co. is a sufficient guarantee that it practically and effectually remedies the inconvenience it is designed to meet."—JOURNAL OF GAS LIGHTING.

PATENT IMPROVED DRY METER,

Which W. P. and Co. pledge themselves to manufacture with the same quality of materials and workmanship as in their Wet Meter, thereby giving Gas Companies and others the advantage of procuring a first-rate Dry as well as a Wet Meter, which, hitherto, they have been unable to do.

STATION-METERS AND GOVERNORS,

Which can be seen at all the London Gas-Works. Also Liverpool, Manchester, Sheffield, Nottingham, Belfast, Glasgow, Birmingham, Dublin, Bristol, Leeds, Leicester, Brighton, Southampton, Sunderland, Wolverhampton, Bradford, Norwich, &c., &c.

TEST GASHOLDERS, EXPERIMENTAL METERS, EXHAUSTER REGULATORS,

MINUTE CLOCKS, PRESSURE GAUGES, PHOTOMETERS, PRESSURE REGISTERS, &c.

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TO CORRESPONDENTS.

No notice can be taken of anonymous communications. Whatever is intended for insertion, must be authenticated by the name and address of the writer; not necessarily for publication, but as a guarantee of good faith.

NOTICES.

The subscription is 15s. per annum, if paid in advance during the month of January, or 18s. credit, in two sums of 9s. each, in July and January of each year. Post-Office orders must be made payable at the Charing-Cross Money-Order Office, to William H. Bennett, No. 42, Parliament Street, Westminster.

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Stamped copies, when forwarded by post, must be folded so as to expose the stamp; they are otherwise liable to the full postage charge for letters.

This JOURNAL has been duly registered at the General Post Office for transmission abroad.

All Communications to be addressed to the Editor, No. 42, Parliament Street, Westminster; and orders for Advertisements to the Publisher, Mr. W. B. King, No. 11, Bolt Court, Fleet Street.

THE JOURNAL OF GAS LIGHTING,
WATER SUPPLY, & SANITARY IMPROVEMENT.

TUESDAY, JULY 29, 1862.

Notes upon Passing Events.

THE Thames Embankment Bill is safe. The Duke of Buccleuch has taken counsel with his wiser friends, and yielded to an unexpected storm of public opinion. Once more this wealthy and agreeable nobleman, whom it is the fashion to call amiable, because he knows the full value of "fair words," having discovered the difference between a duke in England and a duke in Scotland, has shaped his speech of retreat accordingly. With very good taste, his grace expressed himself "willing to bow to the decision of the other House, in which a large majority overruled the judgment of the select committee, and determined that private interests should succumb to public convenience;" and he correctly suggested that the embankment of the Thames would be insufficient to relieve the over-crowded Strand, unless Waterloo Bridge was made toll-free. Still, by a sort of fatality peculiar to the high and mighty, the duke could not complete his carefully-prepared oration without interlarding a sentence of his own, expressing his "indifference to newspaper attacks." He said, "Whether they were the production of professional journalists, or of persons in the habit of writing anonymous letters, he did not care one farthing for them." It is a pity he did not leave this out, and stick to his text. In the first place, in this particular instance it is not true. It has been by these "newspaper attacks" that the Ducal-Gore-Pennethorne-Shelley-Horsman blunder or job has been defeated. The duke, like all other political dukes and peers of every degree, and M.P.'s, and squires, and officers, military and naval, and bishops, and clergy, dignified and inferior, only dislikes anonymous newspaper writing when it is against his or their particular views. All public characters use the best guns they can get, for money or fair words, of the English—that is, the anonymous press. They only object to the long range or red-hot shot when fired against them or their pet arrangements. In Edinburgh, the Duke of Buccleuch has at least one anonymous writer of no mean powers of scarification, ready, willing, and able to make war to the knife and vitriol-pot with any who objects ever so mildly to any of the rules, regulations, opinions, or prejudices of the great chief. When a Frenchman protests against the anonymous there is some sense in it, because it is not the custom of his country, but in an Englishman, a Scotchman, or Irishman, it is intensely absurd, because all persons of any political consequence are in daily communication with the press. As for the fashionable world, what will not its members, male and female, baroneted and coroneted, do to obtain the notice and paragraphic praise of organs which, when grapes are sour, they affect to despise? The speeches in Hansard, carefully corrected by peers and M.P.'s, and the columns of fashionable intelligence supplied by countesses and duchesses, answer such stale and silly *fanfaronnade*. We wait now impatiently for the report of the commission on the south-side embankment. By some means or other, funds must be found to complete the much-needed work on both sides of the river, always presuming that the Lambeth manufacturers are ready to help an undertaking which will so much improve the value of their property, and not anxious to make a market of their position on the river-side. Mr. Doulton must try to keep them within reasonable bounds. His best chance of obtaining a respectable position in the House will be to confine himself to parochial, or, at any rate, metropolitan questions, for his one speech has proved that he commenced his public education too late to succeed as a political speaker amongst gentlemen. A letter more or less makes no difference in Lambeth, provided the tongue is fluent and the voice loud.

We do not want to see our soldiers, sailors, and civilians ticketed with crosses and striped with ribbons, as rewards for all manner of petty or imaginary public services. On the other hand, our public servants, when not highly connected, seem to have every possible inducement to do as little as possible. To invent anything of value to the nation, is usually to be put to great expense; to be looked coldly on as a troublesome person; to be set to work hard without pay; and finally, if very successful, to receive, as a great reward, a moderate per centage of costs out of pocket. This is the very best side of improvements for the use of the public service, from the days of Earl Dundonald down to Captain Cowper Child, before the *Monitor* and *Merrimac* battle. Captain Grant, the inventor or the improver of military cooking-apparatus, is one of the last martyrs to the hatred officialism has of inventors. A few years ago, attention was drawn to the disgusting monotonous system of cookery prevailing in the British army. Captain Grant turned his attention to the subject; and partly by his arrangements, and partly by the novelties and competition which his system brought about, materially improved the British soldiers barrack-kitchen. Colonels Lindsay, North, and Dunne, General Buckley—none of them radiant reformers—all testify to the value of Captain Grant's exertions and improvements. Sir George Lewis, according to official precedent, meets the claim with quibbles, and thinks that Captain Grant has been treated handsomely by being repaid as much of his actual expenditure as he could prove—a payment which leaves the cookery reformer a loser of over £250. This is certainly not the way to make the most of the latent talent in the army.

How much Captain Grant must regret that, instead of inventing a kitchen-range, he did not get the designing of a dish-cover for South Kensington.

A "Blue Book," issued not long since, contains the result of the inquiries of a committee of the House of Commons into the "existing state of legislation for the protection of life and property against fires in the metropolis." From the report we extract the following facts:—The number of fires in 1833 was 458; and in 1861, 1183. The area of the Metropolitan Board of Works, to which the inquiry was confined, includes 79 parishes, and covers an area of about 170 square miles, with a population of about 2,800,000, residing in 360,000 houses, with a rental for rating of about £12,450,000. Under existing Acts of Parliament, every parish is obliged to keep one large engine, one small, called a hand-engine, a leather-pipe, and a certain number of ladders. Practically, these parish-engines are of no value, except to extract fines out of householders who neglectfully allow their chimneys to get on fire for want of sweeping. Mr. Newmarch calculates the total value of property insurable within six miles of Charing Cross at not less than 900 millions, and of this not more than about one-third is insured. Up to the year 1832, the principal fire-insurance offices maintained rival establishments of engines and men, with a sort of militia of Thames watermen, who wore the coat and badge of their respective offices, but were only paid on the occasion of fires. In those days, there was the fierce rivalry between these independent brigades at every great fire, which is described in the "Rejected Addresses," parody of Walter Scott:

"The Hand-in-Hand the race begun,
Next came the Eagle and the Sun;
Th' Exchange, where old insurers run,
The Phœnix, where the new."

But, in 1832, an arrangement was made, by which one brigade was formed at the joint expense of the offices which had before maintained separate establishments. The expense was at first £8000 a year; it has gradually increased to £25,000, with 20 stations and 127 men. The companies who have hitherto supported this fire-extinguishing army, object to any further increase of its numbers and cost, and call upon the general or local government to take up the burden imposed by the annual increase of the buildings of the metropolis. In addition to the London Fire Brigade, brigades are kept up, at considerable expense, by all the dock companies, and by several private individuals. Mr. Hodges, the distiller, expends £400 a year on his brigade, and goes off to every fire where it is likely to arrive first." The fire-engine establishments of the older parishes of London are supposed to cost nearly £10,000 a year, and are next to useless. They bear the same proportionate value to the Fire Brigade that a beadle does to a blue policeman. But, in Hackney, a very efficient brigade is maintained at an expense of about £500 per annum, which is about one halfpenny in the pound on the rating of the parish. In Liverpool, there is a Fire Brigade of 150 men, forming an integral part of a police fire-force of 1000 men; the whole management being under the charge of the superintendent of police, Major Greig. The annual expense is estimated at £2800, the population being 475,000. In Manchester, the watch committee of the corporation have a brigade not connected with the police. The annual expense is about £2000, one half defrayed out of the town rates, and "partly by money recovered from owners of property which has been destroyed by fire, which amount is paid by the fire-insurance offices, where such property has been insured, and the remainder from owners of property who have not insured. The population of Manchester is 346,000, and the rates are assessed on an annual value of £1,387,000. At Glasgow, the arrangements are also under a local Act. The population is 400,000; the cost is about £2000 a year, and the amount is raised in the same way as at Manchester. "In all these three towns, the supply of water at high pressure is almost unlimited, and the power of extinguishing fires by the application of hose-pipes to the water-mains gives extraordinary facilities for effecting this service in an economical manner, almost dispensing with the use of engines." The committee concluded by recommending that a Fire Brigade be formed, under the superintendence of the Commissioners of Police, on a scheme to be approved by the Secretary of State for the Home Department, to form a part of the general establishment of the Metropolitan Police, and that the Acts requiring parishes to maintain engines be repealed; that the area of the new Fire-Brigade arrangement be confined within the limits of the jurisdiction of the Metropolitan Board of Works. This report cannot be accepted without remark, but we shall first extract some of the more curious points of evidence. Captain Eyre Massey Shaw is the present chief of the Fire Brigade, to which he was appointed on the death of Mr. Braidwood, having previously been Superintendent of Police and Fire Brigade at Belfast. He states that the number of men under him is 127; horses available (they are hired), about 50; engines, including 3 ordered, 40; stations, including 2 floating on the Thames, 19. Captain Shaw considers the steam-engine, which can be drawn at the rate of 10 miles an hour, for short distances, by two horses, of "enormous advantage; the number of engines sufficient for the present number of stations; and the supply of water, except in one or two districts, ample." He does not consider a separate water supply for the use of fire-engines at all requisite; thinks that, "as a matter of Police, in a general sense, the Fire Brigade ought to be connected with the Police; but that, to make skilled firemen out of street constables, is impossible." Having been in America, he has had an opportunity of seeing large fires in New York, Philadelphia, Washington, and Boston. At New York, he saw a large church and hotel, on the Broadway, burned down. Does not consider the American system suitable to this country. The means employed are very efficient for smothering the fires, but involve a larger destruction of property than the fires. The engines are the property of Volunteer Companies; are generally more powerful than our hand-engines; and are worked by large numbers of strong men. There is abundance of water. "They have rivers of water flowing in the streets." The competition between the Volunteer Companies is very keen—Fire Volunteer Companies being a political institution; the destruction of property arises from the reckless use of water. They have no interest in the property; their object is to put out the fire as quickly as possible. Captain Shaw does *not* consider it advisable to organize labourers to work our engines. In Paris, the Sappers and Miners are the firemen, and vary in number from 800 to 1200. They have an immense number of very small engines, which are well suited for their duty. The Building Acts of Paris are more strict than those of London. The material of the walls is better, and the floors are solid; therefore, a fire in Paris is generally confined to the house, and can be extinguished by pouring water on it. Captain Shaw thinks that a nine-inch brick wall will resist any fire as long as it stands; but, in London, there are so many communications, and very often the party walls do not run above the ceiling of the top floor, and then from that up to the roof is one continuous line for the whole street. In England, the firemen are few, but skilled. In Paris, they are numerous and unskilled. The men from the crowd in London at fires, who do the pumping, are paid 1s. the first hour, and 6d. for every other hour, with as much beer as they can drink. Three steam fire-engines have been ordered, and Captain Shaw thinks they will, in a great degree, supersede manual engines. "Still, it will not do to depend entirely on steam, because, if a steamer broke down, you may have to wait ten minutes for the next, and lose a house." The present mode of signalling a fire, is by running a man from station to station, a fresh man starting from each station. Captain Shaw considers that telegraphic communication should be introduced. But fire insurances, who form the Fire-Brigade Committee, are not inclined to go to any further expense in improving an establishment, they are determined to give up to the local or general Government, unless they receive a subsidy. The evidence of Mr. Drummond, the managing director of the Sun Fire Office, is well worth studying by those who think of taking shares in any new fire-insurance company. The Sun pays about £4000 towards the expenses of the Fire Brigade. Mr. Drummond is opposed to transferring the Fire Brigade to the Police, although he requires the offices to be relieved of the increasing expense. He considers that at Liverpool and Manchester, they "do not work so well in saving property as in putting out fires." High premiums charged some years ago in Liverpool, in consequence of the great fires, have had the effect of producing better built warehouses, properly classified, and a good water supply. The premiums have, consequently, been reduced. Mr. Drummond hints, that if the public would contribute £10,000 a year to the Fire Brigade, the insurance companies would be willing to continue the management, and that that would be the best arrangement. Fires, in small establishments, have very much increased of late years. This

increase is due to fraud. There is no authority for inquiring into the cause of a fire, unless death has ensued. Fire insurances are unwilling to investigate cases unless very gross, and, at most, confine themselves to refusing payment of insurance; even this is not always done, competition for business being so keen. This is obviously a case for an amendment of the law, and for extending the power of the coroner to inquire into every suspicious fire. Mr. Humphreys, the coroner for the eastern division of the county of Middlesex, mentioned a case in which a woman had been sitting on the top of a house that was on fire, and escaped over the roofs of two or three others. She then fell into hysterics; a surgeon was sent for; and it was found that, under her night-dress, were stays, her usual body-dress, and a gold watch and chain! The parties did not claim the insurance money, but they were not punished. In Liverpool, the Fire Brigade is composed of policemen, selected and trained for the duty, who act as policemen until a fire occurs. In Manchester, they are never selected from the police, but from artisans, brick-setters, slaters, gas-fitters, &c.; and only form part of the police as being under the same superintendence—the Watch Committee. We learn from Mr. D. W. Harvey's evidence, that the population of the City of London has declined from 129,128 in 1851, to 113,367, and the number of inhabited houses from 14,693 to 13,478. Mr. Easton has a scheme for supplying water for the express purpose of extinguishing fires, by filling large reservoirs in certain elevated situations; but, as it would cost three millions, it may be dismissed for the present. For the protection of the Houses of Parliament and the palaces, he has recommended a reservoir, to contain about one million gallons, on Primrose Hill, and a pipe to lead from it to Buckingham Palace, round the public offices, to the Houses of Parliament, the Royal Mews, and Wellington Barracks; to deliver, if needed, 3000 gallons per minute; at an estimated expense of £25,000. To extend the scheme to all the docks and public buildings between the Bank and the Thames Tunnel, he estimates at £80,000. Fire-engines not to be required. In answer to statements that water supply was often deficient in London, Mr. Quick, engineer of the Southwark Company, was called, and put the question on a sensible footing in a very few words. He said: "There is water enough in the mains, but the pressure would not be sufficient to throw it to the tops of the houses without an enormous increase of expenditure." "If proper arrangements were made to have the turncock called, the water would always be on at a fire by the time the engines were ready to be worked; but, unfortunately, no one will take that responsibility. At the fire in Paper Buildings, Temple, although the Temple had the management of the cocks themselves, their officer, in the confusion of the minute, turned the water off instead of on;" and this with inexperienced people is an accident likely to occur.

We must reserve, for the present, further information on this important subject.

A writer in the *Cornhill Magazine* has come to the conclusion that the poor are relieved on a better plan in France than in England. Such is not the opinion of M. Cochut, whose comparison of the pauperism of the two countries, in the *Revue des Deux Mondes*, we have referred to in previous "Notes." M. Cochut, in an elaborate paper, showed that on a small per centage of paupers, infinitely more care and money was bestowed in England than in France. The fact is that there can be no comparison between the systems of the two countries, because the political and social life of the working classes is essentially different. In the first place, the French worker, to coin a convenient translation of *prolétaire*, lives under a system of registered control, unknown, and impossible in this country. The officials charged with assisting parties applying for relief, with the funds not of a locality but the State have no need to put half the questions which form the standing catechism of relieving officers and poor-law guardians in this country. The French applicant has "his papers," which tell when he was born, and where he has lived pretty well all his life. If he is a workman, and not an agricultural labourer, he must produce his *livret* or book of characters from each master he has served, and his military or naval career fills up a certain number of years easily traced. If there are any doubts, the police of the district can be called on to intervene and make a report, or ask questions, which the applicant for relief refuses to answer at his peril. In the next place, the French lame and blind, and very aged, are authorized to beg on certain days, and at certain places. This must produce a considerable income in a Roman Catholic country, relieving to that extent the taxpayers. At the present day, the absolutely infirm and aged are made very comfortable in our workhouses. In the third place, the city of Paris has not only well endowed poorhouses and charitable religious institutions, very necessary institutions, where the right to relief does not exist, but bread, the principal food of Frenchmen, is artificially reduced in price for the benefit of the working classes. Lastly, and most important of all, the scale of living amongst, not only the working classes, but the peasant proprietors is so low in France that our paupers would consider themselves starved upon it. Often have we seen a peasant owning land worth £40 a year making his principal meal—it cannot be called dinner, for he had no regular hour—off a long dark loaf, a lettuce, an onion, and bottle of cider or wine, of a degree of thinness and acidity which cannot be imagined, even by those who have tasted cider in the harvest fields of Devonshire. The fact, that the able-bodied French poor only receive, on an average, 25s. a head per annum, is no proof that the funds are well administered, as a *Daily News* writer asserts, but a sign that the chief amount of funds is expended in two or three great cities, while, as we know in country districts, in times of bad harvests and general distress, the French poor pine in silence, having neither a free gossiping press to take up their cause, nor great and wealthy country residents to assist them in purse, and by stimulating the liberality of the tax-paying farmers. The English system of organized medical relief at the houses of the poor, was, until recently, unknown in France, and has only now been adopted to a certain extent. A French writer has lately noticed, with admiration and astonishment, the excellent education and training bestowed on our pauper children in modern schools. The English writers on France speak generally of Paris, and often compare a fine institution there with some English country workhouse, not yet raised to the modern model. To keep girls in a pauper-school until they are sixteen years old is not an advantage, as a writer in the *Daily News* suggests: on the contrary, pauper children should begin to work at the same age that they would work if living with their parents—thirteen or fourteen. In Paris, a little has been done in pauper education, and done well, for it is a new thing. In this country, as a rule, the modern poor house-schools are well managed and daily improved, but the reform has to extinguish the leaven of defects nearly a century old in country workhouses. The writers referred to have made another mistake. They have taken a picture of the management of the French poor from written rules and regulations, which are excellent, and sentimental in tone, and the English picture from observation. In all countries official theories are beautiful, but it is only in this country that the most obscure person dare find fault with an official administration. No workhouse authority will admit that any pauper ever died from neglect, or that any rule is too strict or ill applied; but the newspapers and public opinion check the natural and necessary harshness of officials. In France, if a dozen paupers died out of doors through the harshness of an official—and officials are not gentle in France—who dare "insult and bring contempt on the Government" by printing the case? It would be unfair to take Victor Hugo's *Les Misérables* for a picture of France. Yet such a story as his is only possible under French laws. There is, however, one thing quite certain—the distressed working people of Lancashire and Cheshire ruined by the cotton famine cannot and must not be treated like the professional vagrants who worry the London relieving officers, or like the descendants of the hereditary agricultural paupers of such counties as Wiltshire and Kent, who look on poor-law relief as a right, and the "big house" as a home. The cotton workers are as much the victims of misfortune as the survivors of an earthquake. They must and will no doubt be treated with tenderness and consideration. Still, relieving officers have a hard task to distinguish between the true and the false. We really do not know what the *Daily News* and *Cornhill Magazine* writers mean by our "imprisoned, discontented, generally irreclaimable, costly pauper population." We have travelled through many counties without being able to hear of a dozen able-bodied paupers in any one workhouse. We do not believe that there is a pauper population, although there are a great many who want food whenever wages cease for a day or week. Knowing a good deal of French officials of every class, we may be permitted to doubt whether there

are many who "succour the unfortunate without causing them to blush." But the French live under a despotism of bureaucracy, and despotism can afford to be lenient in words. Our pauper can make a mild riot without fear of the police appeal to a magistrate, go from the parson to the dissenting minister, and even write to the newspapers.

We learn from the *Presse Scientifique* of July 1 that M. Barral has completed and published the seventeenth and last volume of his edition of the works of Arago. This volume contains tables "intended to facilitate reference to any of the innumerable scientific documents contained in the sixteen previous volumes." There is also a list of all the authors quoted, and persons referred to, by M. Arago, with a summary of the circumstances which led to their being mentioned by the illustrious perpetual secretary of the Academy of Sciences. In the course of a sketch of Arago's life and labours, M. Barral observes, "From the moment that in 1805 he left the Polytechnique School to enter the Observatory of Paris until his death in 1853, Arago never failed to make every year a series of experiments, the results of some of which were of the highest importance. During the same period, he composed forty-seven biographical notices, thirty-three scientific notices, fifty-six memoirs or notes on discoveries he had made or extended, sixty-three reports to the Academy of Science, the Board of Longitude, and the Chamber of Deputies. He also made fifty-three set speeches in the Chamber of Deputies, chiefly on scientific subjects. Altogether, there are extant more than five hundred separate published productions of his pen. M. Arago did not consider that the Academicians were absolutely bound to report on all papers presented to the Academy of Sciences: on the contrary, he considered the early publication of the papers presented to the Academy of the highest importance, because publication alone established the scientific evidence on which the authors would eventually obtain the rank and reputation they deserved. It is one of the remarkable points in the career of Arago, that for many years he directed his attention to several subjects at the same time, although all were of a recondite nature and requiring deep and sustained attention. He turned, without a pause, from a problem of astronomy to investigate a question of natural philosophy or meteorology, or to converse with the many men of science who came to consult him. Thus he, as it were, relieved his mental eyesight by constantly changing the object of his observation."

Circular to Gas Companies.

All the gas companies in the kingdom have had a narrow escape from legislative interference in a matter affecting the management of their works, which, if it had not been prevented, would have caused them serious embarrassment. The proceedings of the House of Lords, on the Bill for the safe keeping of petroleum, seem to justify the opinion of one of its members, who was reported to have exclaimed, "No man's property is safe during the last few weeks of every session of Parliament." The Bill, as it was introduced into the House of Commons by the Government, defined the term petroleum to include "any product thereof that gives off an inflammable vapour at a less temperature than one hundred degrees of Fahrenheit's thermometer;" and it provided, among other things, that not more than twenty-five gallons of it should be kept within 100 yards of any dwelling-house or warehouse, except by license obtained from the local authorities; the contravention of such provision rendering the offenders liable to a penalty of £20 a day for each day during which the petroleum was so kept. As the Bill affected only petroleum and its products, it encountered no opposition, except by petitions from a few importers and manufacturers of American rock-oils, and it reached the House of Lords with only one amendment, by which the quantity of petroleum allowed to be kept in an unlicensed place was increased from 25 to 32 gallons. The Bill was read a first and a second time in the Lords without undergoing any alteration, but, on the 15th instant, when it was in committee, Lord Kingsdown, a law lord, moved an amendment to the first clause, which defines what petroleum is, to the effect that it should include "*any* mineral product that gives off an inflammable vapour at a temperature of less than one hundred degrees of Fahrenheit's thermometer, *whether obtained from the petroleum of commerce, or from coal, schist, shale, or other mineral substance.*" The forms of the House of Lords do not require notice to be given of proposed amendments, as is very properly required in the Lower House, and thus, without any previous knowledge of the intention to propose such a complete change in the character of the Bill, the amendment was carried without opposition. The Bill, as thus "amended in committee" was no longer "a Bill for the safe keeping of petroleum" alone, as its title declared, but brought within its operation the products of all mineral substances. It would, therefore, have included gas-tar, as one of the products of coal, for that substance gives off an inflammable vapour at a lower temperature than 100° of Fahrenheit; and had the Bill passed with Lord Kingsdown's amendments, no gas company in the kingdom would have been permitted to keep more than forty gallons of tar within fifty yards of any dwelling-house or warehouse without the special license of the local authorities. As soon as the Bill was printed in its altered form, it attracted the attention of those who watch the progress of all public Bills in the interest of gas companies, and steps were immediately taken to represent to Lord Stanley of Alderley the serious obstruction which the extension of the original object of the Bill would occasion in the management of gas-works. These representations were so vigorously seconded by a deputation from the manufacturers of tar-products that his lordship consented to move the omission of Lord Kingsdown's amendments on bringing up the report. This was done on the same evening, and the objectionable words were struck out. The Bill in its present form, therefore, is the same as when it passed the House of Commons, with the exception that the quantity of petroleum allowed to be kept in an unlicensed place is increased from 25 to 40 gallons; and the distance at which petroleum may be kept from any dwelling-house or store is diminished from 100 yards to 50. The representations to a practical man like Lord Stanley of Alderley that the majority of gas companies have more than 40 gallons of tar constantly in the hydraulic mains, condensers, and other portions of their apparatus, and that all the tar in store in gas-works is kept under a stratum of water, made a forcible impression, and succeeded in proving to him the danger of legislating on such matters until after due inquiry. Had it not been for the prompt and energetic measures taken the instant that Lord Kingsdown's amendments became known, there can be no doubt that all gas companies would within twenty-four hours have been placed under the embarrassing restrictions which those provisions would have imposed on them; and, as half the penalties incurred would have gone to the informer, a plentiful crop of informations would have been the immediate result of the passing of the Bill in that form.

In taking measures for the safe keeping of petroleum, our Legislature has followed the example of several of the States of America, where still more stringent regulations have been adopted to guard against the danger of burning the crude oil, and such protection is the more needed at the present time, as an attempt is being made to introduce into this country large quantities of the crude rock-oil of Canada for the purpose of being refined. The prospectus of a company, called the "Canadian Native Oil Company," of which Mr. Roebuck is the chairman, has been issued, the object of which is to import the rock-oil of Canada in its crude state, and it is proposed to erect refineries and storehouses on the banks of the Thames. It is said to be the intention of the company to adopt Dr. Hassal's standard of safety of 130° of Fahrenheit, and not to sell any oil that will ignite at a lower temperature; but it will require great vigilance in the authorities to guard the shipping of the Thames from the danger of proximity to the vessels loaded with the inflammable oil when entering the river, and whilst moored near the refinery. One of the reasons stated in the prospectus for the formation of the company is, that the London insurance companies have become alarmed at the inflammable nature of petroleum, and refuse to take any risk on the crude oil, or to accept risks on other property where it is stored, and the dock companies also refuse to permit any ships in which it is stored to enter their docks. The want of some protective law against the sale of dangerously-inflammable oils is now strongly felt in Canada itself, for the colonists are not only exposed to the danger arising from the accumulation of crude oil, the product of their own wells, but the highly inflammable oil of Pennsylvania, which is not allowed to be sold within the States, is sent to Canada, where no law exists to prevent its entrance and sale. We have inserted, in another column, a short article from a Toronto paper, showing the necessity of protection from the danger which

the State Legislatures of America have recognized for some time past.

In the last stages of the Parochial Assessments Bill, in the Commons, an amendment was proposed by Mr. Howes, the member for East Norfolk, and carried with the consent of the Government, to the effect that "the gross estimated rental for the purpose of the schedule to this Act shall be the rent at which the hereditament might reasonably be expected to let from year to year, free of all usual tenants rates and taxes, and tithe commutation rent-charge, if any." From the ambiguous manner in which the clause is worded, it was at first suspected that the effect of this amendment would be to restore the third clause of the Bill as originally introduced, which excluded from the estimate of rateable value all deductions for repairs, insurance, and other expenses necessary to maintain the hereditaments in a state to command the rent. That clause was struck out of the Bill by the Select Committee, and Mr. Howes's amendment was looked upon as a breach of faith with the gas and other companies who had opposed it. The opinion of an eminent parliamentary counsel was therefore taken as to the effect of that amendment, but he considered that it does not affirm the principle of rating objected to, because the rate is never based on the gross estimated rental, but on the net annual value. The effect of the new clause will merely be to reduce the figure in the column of "Gross estimated rental," leaving the ancient principle of rating recognized by 6 and 7 Wm. IV., c. 96, untouched, so far as the net rateable value is concerned. The Duke of Newcastle, who has charge of the Bill in the House of Lords, consented to the introduction of a proviso, to the effect that "nothing herein contained shall repeal or interfere with the provisions contained in sec. 1 of the said Act, 6 and 7 Wm. IV., c. 96, defining the net annual value"—which removes all doubt about the question.

The Tramways Bill was considerably amended in the Select Committee of the House of Commons—many of the provisions which were objected to by the gas and water companies having been altered so as to render them less objectionable; and the clause granting power to the Queen, by order in council, to suspend or alter the provisions of any local Act of Parliament, was omitted; but the promoters of the Bill refused to insert the clauses of the Railway Clauses Consolidation Act, which the opponents of the Bill considered necessary for the due protection of their interests; and they consequently intimated their intention to oppose the further progress of the measure. Nothing short of the introduction of those protective clauses was deemed sufficient to give gas and water companies free access at all necessary times to their mains and pipes, for the purpose of repair or alteration; and no reason could be assigned why greater power to interfere with the property of those companies should be given to the promoters of tramways than to railway companies. The opposition which was raised to the Bill, even in its amended condition, was so formidable, that Mr. Ayrton at length withdrew it; but, at the same time, he expressed the hope that the Government would next year bring in a Bill for the establishment of communication on tramways.

The Police and Improvement (Scotland) Bill has undergone many changes affecting the interests of gas companies in Scotland in dragging its long length through Parliament. As it first presented itself in the House of Commons, in March last, it contained few provisions respecting gas lighting; and the only clause relating to the subject to which objection could be taken referred to the settlement of the conditions on which gas should be supplied to the public lamps, in cases of dispute by arbitration. In the next stage of the Bill's progress, however, thirteen clauses were introduced, by a Scotch Member, empowering the commissioners either to purchase or lease the gas-works of any established company, and to become manufacturers of gas-meters, gas-fittings, and of all other articles and things in any way connected with the supply of gas. By the powers thus proposed to be conferred on the police commissioners, the gas companies would have been placed at their mercy, and the gas-fitting trade in Scotland might have been seriously injured, if not destroyed. The strong opposition raised to those iniquitous provisions caused them to be expunged from the Bill by the House of Commons; and it was sent to the Upper House in nearly the same state, as regarded the gas companies, in which it originally appeared; the only material amendment being the addition of a proviso to the arbitration clause, to the effect that the enactment shall not apply to any burgh where the supply of gas for public lamps is regulated by a local Act. The operation of that proviso will, however, be very limited, there being are only eight gas companies in Scotland that have Parliamentary powers, and the local Acts of at least two of them contain provisions for the regulation of the supply of gas to the public lamps. The 90th clause of the Bill contains, it is important to observe, the first recognition, in any public Act, of the principle that the mains and pipes, or undergound works, of gas and water companies, should be rated, for police and improvement objects, in the same manner as canals, railways, and land used for agricultural purposes. The clause is as follows:—

> The annual value of the following lands or premises shall, for the assessments under this Act, whether the enactments with respect to water have been adopted or not, be held to be the nearest aggregate sum of pounds sterling to one-fourth of the annual value thereof entered on the said valuation roll, viz.:
>
> 1. All lands and premises used exclusively as a canal, or basin of a canal, or towing-path for the same, or as a railway constructed under the powers of any Act of Parliament for public conveyance: excepting the stations, dépôts and buildings, which shall be assessable to the same extent as other lands and premises within the burgh.
> 2. All the underground gas and water-pipes, or underground works of any gas or water-company.
> 3. All woodland, arable, meadow, or pasture-ground, or other ground, used for agricultural purposes.

By this important alteration in the principle of rating, the underground works of a gas company, in any burgh in Scotland in which the Act is adopted, will be assessed for the police and improvement rates at only one-fourth of their estimated annual value. In England, such works must continue to be assessed at their full value, but, whenever the Public Health and Local Government Acts come under revision, the principle adopted in Scotland, of rating gas and water-pipes, will not be overlooked.

We have noticed, in another column, a lecture recently delivered by Professor Faraday, at the Royal Institution, on Mr. Siemens's regenerative gas-furnace as applied to glass-making, and the subject assumes additional interest from the fact that this kind of furnace is now being applied, experimentally, at two of the metropolitan gas-works to the heating of retorts. It will be seen, from the description of the furnace given by Professor Faraday, that the principle on which it is constructed consists in converting the fuel employed into carbonic oxide, by keeping it, when in an incandescent state, for some time in contact with the oxygen of the air, which is admitted to produce combustion, and then burning the gas thus formed by a further admission of air into the heating chamber of the furnace. The chief advantages claimed for this mode of applying the heating power of solid fuel in the manufacture of glass are, its cleanliness, and the facility with which the heat can be regulated. When applied to the heating of retorts, the first of these properties would be of little value; but the power of regulating the heat, and maintaining it at any required degree of intensity, would be a great advantage. As regards the economy of the process, it seems theoretically to be possible to increase the heating power of the fuel, by applying the heat of incandescent coke during its conversion into carbonic oxide, in the first instance, and by afterwards burning the inflammable gas thus produced. We shall wait with much interest for the result of the experiment, the success of which has not yet been ascertained.

Correspondence.

PURIFICATION OF GAS FROM BISULPHIDE OF CARBON.

Sir,—Thinking you may take an interest in the experiments which have been made with our apparatus for the purification of gas, we beg to send you a copy of the report of Dr. Versmann on the subject.

R. Schomburg and Co.

London, 18th July, 1862, 90, *Cannon Street, E.C.*

Chemical Laboratory, 7, *Bury Court, St. Mary Axe, London, E.C., June* 28, 1862.

Gentlemen,—According to your request, I have subjected to chemical examination your improvement in purifying gas, and I now beg to report to you the result of my experiments. The object of your invention is the purification of the gas from bisulphide of carbon, which is said to be effected by passing the gas through your gas-meter filled with oil, which oil is expected to retain the bisulphide of carbon.

Having investigated only a short time since the question of the quantity

and the importance of this impurity in gas, I felt the more interested in your invention, because, up to the present moment, no process is known by which this impurity can be separated on the large scale and without seriously injuring the quality of gas.

The quantity of bisulphide of carbon in gas greatly depends upon the manner of manufacture, beause, a series of experiments, made by different chemists, show that the quantity varies from 3 to 60 grains of sulphur, as bisulphide of carbon, per 100 cubic feet of gas. I myself found only small quantities, never exceeding 21 grains; but, as your improvement can easily be introduced into gas-works, and without any considerable cost, the general application certainly will be desirable.

For estimating the value of your apparatus I employed these methods, viz.: after having passed the gas through your apparatus I burned it, and collected the products of combustion by a very careful arrangement. The gas was burned in a large bell-jar dipping into mercury, which was covered by a layer of a solution of caustic potash; two tubes passed through the mercury into the bell-jar, the one for the gas, and the other for a supply of air, which was made to pass through a Woulff's bottle, containing potash solution, before it could enter the bell-jar. The top of the bell-jar was connected by means of a bent glass tube with a system of three Woulff's bottles containing caustic potash solution, and with an aspirator, by the action of which every particle of the products of combustion was drawn through the three Woulff's bottles, and then absorbed. As soon as the aspirator was set in action the air was drawn into the bell-jar, by which arrangement a steady and regular combustion was insured. The contents of the three Woulff's bottles, together with the potash solution, floating on the top of the mercury, were afterwards carefully collected, and the sulphurous acid estimated in the ordinary manner, as sulphate of barytes.

The gas, thus purified by your apparatus, was found to contain not more than 4 *grains of sulphur*, whereas, before, it contained 21 grains. Another experiment was made, by passing a large quantity of gas through your meter and afterwards mixing the oil with ether, distilling off the ether and bisulphide of carbon, and then oxidizing it to sulphuric acid, which was determined as sulphate of barytes. This experiment gave the same result, namely, from 21 grains of sulphur, contained as bisulphide of carbon, in 100 cubic feet of gas, very nearly 16 *grains* were retained; so, that in this experiment, on a small scale, about 80 per cent. of the bisulphide of carbon were absorbed by passing through your apparatus.

This is certainly of great importance, but, I am also convinced, that with proper arrangements on the large scale, the gas can, without difficulty, be purified on your principle, and *all* the bisulphide of carbon be retained.

I therefore can only strongly recommend your improvement to the managers of gas-works, because it really absorbs a noxious impurity; and, even if the quantity of this impurity in gas be only very small, your process is a certain guarantee for the absolute purity of gas.

I have the honour to be, gentlemen, your obedient servant,

FREDERICK VERSMANN, F.C.S.

Messrs. R. Schomburg, 90, Cannon Street.

TAR-BARRELS.

SIR,—If any of your manufacturing friends wish to confer a boon on gas companies, and at the same time put money in their own pockets, I think they could accomplish both objects by contriving a cheap and efficient "tar-barrel" to hold from 30 to 50 gallons. Wooden barrels are a constant source of expense and trouble. If they are damaged the coopers will not repair the nasty dirty things, and if exposed to sun or wind they are almost sure to become leaky.

A COUNTRYMAN.

Register of New Patents.

2662.—JOHN COWPE HEATON and JOHN DEAN, both of Rotherham, York, for "*Improvements in the construction of taps or cocks.*" Patent dated Oct. 24, 1861.

According to one form or arrangement, this improved tap or cock is composed simply of three or four parts, namely, the barrel, the valve, and a screw-cap, or screw-cap and spindle; the screw-cap when used without the screw-spindle serving the threefold purpose of the plug, the crutch, and the cap. The actual valve-face consists of a leather or other suitable washer, which may or may not be secured to the lower end of a short stem, the upper end of such stem having a cup-leather or other suitable packing fitted thereto, so to enable it to work water-tight inside the barrel. On the top of the barrel is cut a screw-thread, which fits the internal screw-thread of a cap or cover, which serves to close, and in some cases, to open the valve, as hereinafter described; or in place of the cap or cover opening or closing the valve a screw-spindle working through the screw-cap may be used. When the cap or screw-spindle is screwed home, its inner surface at the top bears against the top of the valve-stem, which is contained wholly within the barrel, and so holds the valve firmly down upon its seat; but, by partially unscrewing the cap or screw-spindle by means of suitable lugs or projections formed upon it for that purpose, or by a convenient crutch-handle fitted to the top thereof, the valve-stem is released from the pressure of the cap or screw-spindle, and the valve is then opened by the pressure of the water upon its under-side. Should the pressure not be sufficiently great to force up the valve and stem with its accompanying packing, the stem may be swivelled to the under-side of the cap or screw-spindle, so that on raising the cap or screw-spindle, by partially unscrewing it, the valve will be lifted in lieu of being opened solely by the pressure of the water.

The claim is for the general arrangement of taps and cocks, as hereinbefore described.

2663.—WILLIAM DICKS, of Floore, Northampton, smith, for "*Improvements in water-meters.*" Patent dated Oct. 24, 1861.

According to this invention, it is proposed to employ syphons in combination with suitable floats and oscillating conducting-spouts. The syphons, of which there may be two or more, are contained in two separate water-chambers, these chambers being placed side by side over a large water-chamber or tank, from which the supply is drawn off when required for use. An oscillating conducting-spout is placed on the partition which separates the two syphon-chambers, and is so arranged as to turn over and direct the supply from the service-pipe into each chamber alternately, such oscillating motion of the conducting-spout being made to transmit movement to any suitable registering or counting apparatus. Supposing one of the syphon-chambers to be filled with water at a level coinciding with the top-bend of the syphon, the syphon which has its short leg in the upper vessel, whilst its longer limb communicates with the lower tank, immediately discharges the water from the upper vessel into the tank below the length of the short leg, being capable of adjustment so as to insure a certain determined quantity of water being discharged into the lower vessel. The rapid sinking of the water-level in the upper vessel or syphon-chamber, occasioned by the discharge through the syphon, causes a float in that chamber to operate upon the oscillating conducting-spout, and turn it over towards the adjoining syphon-vessel or chamber, which then receives a supply of water, as described in reference to the first vessel or chamber. On the water in the second vessel or chamber rising to the proper height, the second syphon comes into action as before, and discharges the determined quantity of water into the lower or supply-tank. The float in this second syphon-vessel or chamber acts upon the oscillating conducting-spout as before, when the water-level falls, and again turns it over to the first syphon-chamber, and so on. The supply from the service-pipe is thus directed into the two syphon-chambers alternately, and each chamber, by means of its syphon or syphons, discharges a certain regulated quantity of water into the tank below at each oscillation of the conducting-spout, such oscillations being made to actuate any suitable arrangement of counting or registering mechanism. The lower tank is provided with a ball-float, which is in connexion with a stop-valve on the service-pipe, so that when the tank is full the supply is shut off. It is proposed to apply an arrangement for reducing the pressure of the water to a minimum previous to its entering the oscillating-spout. In order to insure the entrance of air into the syphon after it has operated, and prevent uncertainty of action, a number of slits or perforations may be made in the bottom of the short leg of the syphon, so as to allow the air to enter freely when the desired regulated quantity of water has been discharged through it.

The claims are for—

1. The general construction and arrangement of water-meters, as hereinbefore described.

2. The combination of syphons and measuring-chambers with a self-acting oscillating conducting-spout for the purpose of measuring water, as hereinbefore described.

3. The system or mode of measuring water by the aid of one or more syphons, so adjusted as to discharge a certain determined amount of water during the period of their action, as hereinbefore described.

2691.—WILLIAM TAYLOR, of Newport Pagnell, Buckingham, soda-water manufacturer, for "*Improvements in joints or connexions for metal and other pipes and tubes.*" Patent dated Oct. 26, 1861.

This invention consists in forming a flange or collar on the ends of pipes and tubes, in making undercut grooves, two, three, or more, in the collars, and in the employment of dovetail cottars formed with a head at one end, and with a slot or groove near the other for the reception of a key, which cottars slide into the grooves, and are tightened up by the keys being driven into the slots.

The claim is for forming joints or connexions for metal and other pipes and tubes, by making undercut grooves in the flanges at the ends of the said pipes or tubes for receiving dovetail cottars, which are secured and tightened by keys or wedges, substantially in manner hereinbefore described.

2692.—CHARLES STEVENS, of 31, Charing Cross, London, patent agent, for "*Improved apparatuses for indicating escapes of lighting gas from the conveying-pipes, and determining the precise leaking-places of the said pipes.*" A communication. Patent dated Oct. 26, 1861.

The improvements in apparatuses for indicating escapes of lighting gas from the conveying pipes and determining the precise leaking-places of the said pipes are, firstly, in the apparatus denominated a revealer. The indicating-tube consists of two straight glass tubes communicating by means of one of bent brass. In these three tubes, forming as it were but one, a coloured liquid is contained, the rise and fall of which, occasioned by pressure from the gas, is rendered easily noticeable by means of a marker placed between the two tubes, furnished on each side with two small pointers, distant about two-fifths of an inch one from the other, enabling the time to be more easily remarked which the liquid takes to rise in the branch of the tube where the pressure from the gas is the least. By means of a rod adapted between the two tubes, one end of which is screw-cut, and a nut-screw, the two glass tubes can be made to press closely between their metallic holders.

Secondly, as the revealer would not be observed during the night, an alarum is adapted, which is set in motion in the following manner:—The positive and negative wires of a battery, after being encased separately in a non-conducting substance, are immersed in one of the tubes of the revealer; the two wires have platinum ends slightly bent towards each other, but do not touch; a float having a metallic bottom follows the movements of the liquid in the tube, and, when it has sunk sufficiently, forms the connexion between the two wires, and so puts the alarum in motion.

The revealing apparatus is in connexion on one side with the gasometer, and on the other side with the delivery-pipe; free passage of the gas is given or not to the revealing apparatus by means of the stop-cock.

The apparatus for determining the leaking-places consist of a glass vase similar in shape to the test-glass used for drying gases; it is made smaller near the bottom, and so forms, as it were, two chambers separated from each other by a bottom of china, in which holes are pierced which allow the gas to pass, but prevent the pumice-stone, with which the upper chamber is partly filled, from descending. The upper chamber has a close-fitting cover having two openings, by one of which the volatile alkali is introduced, through the other the gas, which, on an escape being detected, is prevented from passing along in the delivery-pipe by the stop-cock till it has passed, first into the bottom chamber, then into the upper chamber containing the pumice-stone, which has been previously

saturated with volatile alkali. The gas, as it passes through the pumice-stone, aids the evaporation of the ammonia, which escapes with it by the second opening in the cover above-mentioned, to which opening a tube is adapted for conveying the gas back to the delivery-pipe on the other side of the stop-cock. The escape is discovered by carrying along near the conveying-pipes any suitable re-agent which the ammonia would act on, such as a glass rod wetted with muriatic acid. Should ammoniacal or other similar gas not be employed, the lighting gas itself would serve, as it generally contains a small portion of sulphuric acid, which would act on certain test-papers, such as those of salt of copper, lead and silver.

2696.—Bartolomeo Predavalla, of 143, Fleet Street, in the City of London, C.E., for "*A new mode of and apparatus for producing and obtaining an hydropneumatic motive power.*" Provisional protection only obtained. Dated Oct. 28, 1862.

This invention consists in an atmospheric pressure imparting its gravitation on a column of liquid, communicating alternately with a cylinder under the piston, the rod of which fits air-tight into the upper part of the cylinder in which the vacuum is produced.

2711.—John Eaglesfield, of Devizes, Wilts, watchmaker, for "*Improvements in gas-burners.*" Patent dated Oct. 29, 1861.

These improvements in gas-burners consist in placing a triangular or other shaped piece of iron or other material immediately above the apertures of an ordinary fish-tail burner, so that the flame of gas as it issues is split in two parts and passes upon each side of the bar of metal; the flame, however, unites again some little distance above the splitting-bar. The effect of thus splitting the flame causes the flame to burn with little or no blue, and therefore producing better combustion and giving a much greater light for the quantity of gas consumed than would otherwise be the case. One or two little brackets are raised from the burner, on which are fixed the little triangular bar in a horizontal position with an apex or angle downwards, so as to present a cutting or splitting edge to the issue of the gas, the cutting edge being disposed some little distance above the hole or holes of the burner, and so that the jet or jets of gas impinge fairly against the cutting edge.

The claim is for the application of a triangular or other shaped bar of metal, or other suitable material, immediately above the orifices of a gas-burner, whereby to separate the flame and permit of a constant supply of oxygen thereto as and for the purposes described.

2714.—John Hayward, of Everton, Liverpool, Lancaster, for "*Improvements in means or apparatus for raising water, or other fluids.*" Patent dated Oct. 29, 1861.

This invention has for its object improvements in raising water for the purpose of draining marshes or fens, irrigation, lifting sewage from a lower to a higher level, for draining towns, supplying domestic wants, or other purposes.

In carrying out these improvements, a tank or reservoir is employed, which may be made of any suitable shape or size capable of being made air-tight by suitable valves or cocks. This tank is placed so as to receive the contents of a stream of water which flows into and fills it by gravitation, and is emptied as hereafter described. Connected with this tank by an air-pipe (which is made of such dimensions as are required to afford a free passage of the air when the apparatus is in use) is another tank, placed at a suitable height above the water or other fluid to be lifted, and also made air-tight by suitable valves (this tank may be either above or below the level of the first-named tank). The water, being admitted into the first-named chamber or reservoir, fills it; the valve then shuts against the admission of water, and at the same time an exit-valve is opened; the water in going out forms a partial vacuum. This acts upon the second reservoir by means of the communicating pipe before referred to, and the partial vacuum thus formed in the second reservoir lifts the water from the fen, marsh, sewer, or other place to be drained, or from which it is to be raised into the tank or reservoir. When filled, the inlet-valve to this tank or reservoir shuts, and the egress-valve opens, causing the delivery of the water thus raised at its required level. Should the water require to be lifted or delivered at a height above that which the head of water supplying the first reservoir will give, the same process may be repeated by having two or more of these apparatus fixed at suitable levels.

2761.—George Evans, of 69, Gloucester Terrace, Portman Square, for "*Improvements in treating peat to render it useful as fuel, and for illuminating and metallurgical purposes.*" Patent dated Nov. 2, 1861.

The object of one part of this invention is to readily deprive raw peat of so much of its moisture as may leave it fit for a variety of practical uses, and by which it may be converted while wet, and in its pulpy state, into such a consistence that, within a few hours of being raised from the moor, it can be manufactured into fuel, or material for other useful purposes. To attain this object, the saturated peat is combined with other matters of a dry and absorbent nature, and which by abstracting its water so alter its character that the body or mass so formed can be readily compressed and moulded into shapes of any required size, while the materials so added do not injure the qualities of the peat, but rather improve them.

The material selected for this purpose is either mineral or vegetable carbon or charcoal, vegetable carbon being preferred, on account of its well-known power of absorbing fluids, but which it will as readily part with under pressure.

In using mineral carbon-dust, that of anthracite coal is preferred, the sulphurous coals not being so applicable for the purpose. Other well-dried carbonaceous materials are sometimes used, such as granulated peat, saw-dust, spent tanner's bark, or such like substances of a combustible nature, which after their combustion leave little or no residuum behind. In furtherance of the same object, that of drawing away from the peat a large amount of its superabundant water, and altering its character so that it shall no longer resist compression, there is sometimes added, particularly for metallurgical purposes, unslaked lime, or some other earthy minerals used as fluxing agents.

In order to render fresh-cut peat as it is raised from the bog immediately available for the manufacture of fuel, 100 parts of such fresh-cut peat are taken, and, according to the more or less saturated state in which it may be found, are added from 10 to 25 parts of vegetable or mineral carbon, or some other well-dried combustible materials, as hereinbefore stated, and sometimes from 3 to 5 parts of unslaked lime, or some other earthy minerals, the whole being mixed and incorporated well together in a pug-mill, or other suitable machine, till the mass is brought into a state of consistence suited to receive pressure, and to be moulded into blocks, bricks, or forms of any other kind. Thus a fuel of great heating power is obtained, useful for raising steam in ships, locomotive and stationary engines, and for a variety of other purposes.

For the production of illuminating gas, the crude oil obtained from coal, coal-tar, the oil extracted from bituminous shale, petroleum-oils, or any one or more of the cheaper hydrocarbonaceous materials of commerce, are incorporated singly or combinedly with peat, a small quantity of caustic lime being added if necessary to facilitate the extraction of the water, and render more perfect the amalgamation of the peat with the oils, and in this manner a substance is produced from which gas for illuminating purposes can be obtained in great abundance, and which compound may be substituted for coal in the manufacture of lighting gas.

The claims are—

1. Treating raw or wet peat in the manner hereinbefore described to render it useful as a fuel for all purposes, and as a combined fuel and flux for smelting ores.

2. The combination with peat of the crude oils distilled from coal, coal-tar, the oils distilled from bituminous shale, petroleum-oils, and the cheaper hydrocarbons, either together or separately, for the production of a composition to be used in the manufacture of gas.

APPLICATIONS FOR LETTERS PATENT.

2017.—William Edward Gedge, of 11, Wellington Street, Strand, London, W.C., for "*An improved portable or stationary steam-lift and force-pump.*" A communication. July 14, 1862.

2023.—Paul Antoine Lucien Canonicat, of 50, Rue des Petits Pères, Marseilles, France, civil ingénieur, for "*Improvements in filtering water, and in apparatus employed therein.*" July 14, 1862.

2025.—Frederick Major Parkes, of Plumstead, Kent, gentleman, for "*Improvements in the manufacture of gas for lighting and heating, and in apparatus employed in the said manufacture.*" July 14, 1862.

2026.—Oliver Perry Drake, of Massachusetts, U.S.A., for "*A new and useful or improved apparatus for vapourizing and aërating a liquid hydrocarbon to be burned for illumination, or for other purposes.*" July 14, 1862.

2054.—Joseph Richard Abbott, of Birmingham, Warwickshire, lamp manufacturer, for "*Improvements in sliding chandeliers, gaseliers, and other pendent lamps.*" July 18, 1862.

2059.—George John Yates, of Liverpool, Lancashire, chemist, and John William Ward Tindall, also of Liverpool, chemist, for "*A process of deodorizing paraffin, coal, pitch, rock, and other like oils and hydrocarbons.*" July 19, 1862.

2073.—Alexander Morrison Fell, of Anchanhard, Linlithgow, N.B., manufacturing chemist, for "*Improvements in obtaining, or manufacturing sulphate of ammonia and manure.*" July 21, 1862.

2090.—John Henry Johnson, of 47, Lincoln's Inn Fields, London, W.C., and, of 166, Buchanan Street, Glasgow, N.B., gentleman, for "*Improvements in the treatment of the noxious gases or vapours produced in the distillation or purification of tar.*" A communication. July 22, 1862.

2105.—Touissant Lemaistre, of 3, Rue de Grammont, Paris, architect, for "*Improvements in privies.*" July 24, 1862.

GRANTS OF PROVISIONAL PROTECTION.

1891.—Alexander Angus Croll, of Coleman Street, London, E.C., engineer, for "*Improvements in the treatment of ammoniacal liquor of gas-works.*" June 27, 1862.

1905.—Joseph Wale, of Liverpool, Lancashire, plumber, and Thomas Dodd, also, of Liverpool, glass-merchant, for "*Improvements in taps for controlling the flow or passage of fluids.*" June 30, 1862.

1953.—Arthur Warner, of 31, Threadneedle Street, London, E.C., for "*Improvements in preparing materials for, and in purifying coal-gas.*" July 5, 1862.

1957.—Thomas Edwards, of Liverpool, Lancashire, gas engineer, for "*Improved movement for the indices for gas, water, and other fluid-meters.*" July 7, 1862.

1961.—John Henry Johnson, of 47, Lincoln's Inn Fields, London, W.C., and of 166, Buchanan Street, Glasgow, N.B., gentleman, for "*Improvements in wet gas-meters.*" A communication. July 8, 1862.

1979.—Edmund Samuel Hindley, of Bourton, Dorsetshire, for "*Improvements in apparatus used when circulating hot water for warming dwelling-houses and other places, which apparatus may be used for cooling and condensing.*" July 9, 1862.

1992.—Daniel Steele, of Bunhill Row, Finsbury, London, E.C., builder's foreman, for "*Improvements in the method of flushing, or distributing the water in pans or basins applicable to water-closets, urinals, wash-hand basins, or other purposes.*" July 10, 1862.

2017.—William Edward Gedge, of 11, Wellington Street, Strand, London, W.C., patent agent, for "*An improved portable, or stationary steam-lift and force-pump.*" A communication. July 14, 1862.

2023.—Paul Antoine Lucien Canonicat, of 50, Rue des Petits Pères, Marseilles, civil ingénieur, for "*Improvements in filtering water, and in apparatus employed therein.*" July 14, 1862.

2025.—Frederick Major Parkes, of Plumstead, Kent, gentleman, for "*Improvements in the manufacture of gas for lighting and heating, and in apparatus employed in the said manufacture.*" July 14, 1862.

NOTICES TO PROCEED.

608.—Marcus Bourne Newton, of Wharf No. 4, inside Great Northern Goods Station, King's Cross, London, N., for "*Improvements in the manufacture and construction of junction and other drain-pipes in clay, or other plastic materials.*" March 7, 1862.

664.—Alphonse René Le Mire de Normandy, of Odin Lodge, King's Road, Clapham Park, London, S., for "*An improved method of connecting gas and other pipes.*" March 12, 1862.

692.—Richard Archibald Brooman, of 166, Fleet Street, London, E.C., patent agent, for "*Improvements in the apparatuses for measuring and regulating the flow and pressure of gas, parts of which are applicable to hydraulic receivers, and to steam-generators.*" A communication. March 13, 1862.

699.—Rudolph Schomburg, of 90, Cannon Street, London, E.C., and Adolph Baldamus, of Charlottenburgh, Berlin, Prussia, for "*Improvements in purifying illuminating gas.*" March 13, 1862.

705.—George Henry Sanborn, of Boston, Massachusetts, U.S.A., for "*Improvements in gas-regulators.*" A communication. March 14, 1862.

731.—Louis Pierre Mongruel, of 7, Rue Vivienne, Paris, for "*An improved cold-vapour generator, which may also be used in the carburation of illuminating gas.*" March 17, 1862.

734.—John Weems and William Weems, both of Johnstone, Renfrew, N.B., engineers, for "*Improvements in apparatus for indicating the pressure or quantity, and in regulating the discharge of fluids.*" March 17, 1862.

765.—Robert Wilson, of Patricroft, near Manchester, engineer, for "*Improvements in hydraulic processes, and in machinery or apparatus for raising or forcing fluids.*" March 19, 1862.

1017.—William Edward Newton, of 66, Chancery Lane, civil engineer, for "*An improved apparatus for raising and forcing water, and other liquids.*" A communication. April 9, 1862.

1733.—John George Appold, of Wilson Street, Finsbury Square, London, E.C., gentleman, for "*Improved apparatus for regulating the discharge of water and other liquids, and air and other gases.*" June 10, 1862.

PATENTS WHICH HAVE BECOME VOID

BY REASON OF THE NON-PAYMENT OF THE ADDITIONAL STAMP DUTY OF £50 BEFORE THE EXPIRATION OF THE THIRD YEAR.

1681.—Julian Bernard, "*Improvements in the construction and arrangement of hydraulic and other pumps for forcing liquids, and for obtaining pressure.*" July 16, 1859.

1699.—Frederick Collier Bakewell, "*Improvements in extracting oils from coal and other minerals.*" July 19, 1859.

PATENTS WHICH HAVE BECOME VOID

BY REASON OF THE NON-PAYMENT OF THE ADDITIONAL STAMP DUTY OF £100 BEFORE THE EXPIRATION OF THE SEVENTH YEAR.

1622.—Vincent Scully and Bennett John Heywood, "*Improvements in the construction of cocks and taps.*" July 18, 1855.

Parliamentary Intelligence.

HOUSE OF LORDS.

Monday, July 14, 1862.

The Police and Improvement (Scotland) Bill was reported without amendment. Amendments were then made, and the Bill recommitted to a committee of the whole House.

Tuesday, July 15.

Petroleum Bill.—Petitions against the Bill were presented from importers, manufacturers, and consumers of petroleum in Glasgow and Dublin.

Lord Stanley of Alderley moved, that the Bill be considered in committee of the whole House.

Lord Kingsdown, in committee, moved an amendment in the first clause, which was agreed to, but his observations were inaudible in the gallery. It appears, however, from the printed copy of the amended Bill, that the amendment was to the effect that, "'Petroleum,' for the purposes of this Act, shall include any mineral product that gives off an inflammable vapour at a temperature of less than one hundred degrees of Fahrenheit's thermometer, *whether obtained from petroleum of commerce, or from coal, schist, shale, or other mineral substances.*"

Friday, July 18.

Petroleum Bill.—Petitions for amendment were presented from the Gaslight and Coke Company and the City of London Gaslight and Coke Company.

Lord Stanley of Alderley brought up the report, and said that, after full consideration of the matter, he was unable to assent to the amendment which had been proposed by his noble friend (Lord Kingsdown). Communications had been received from a large number of gas companies, from which it appeared that, if the amendment became law, it would prevent their having more than forty gallons of gas-tar upon their premises at one time, as that substance would be placed on the same footing as petroleum. It would be impossible to legislate upon a subject which would lead to results so serious without giving an opportunity to the other House of Parliament of considering the matter. He should, therefore, omit gas-tar, naphtha, and other mineral products, from the Bill, and move that it be restored to its former state.

The motion was then agreed to, and the report, as altered, adopted.

The Police and Improvement (Scotland) Bill was considered in committee, and amendments made.

Monday, July 21.

The Aberdeen Police, Water, &c., Bill.—The Select Committee reported that they had not proceeded with the consideration of the Bill, the opposition thereto having been withdrawn. Bill committed.

The Police and Improvement (Scotland) Bill.—The amendments were reported, further amendments made, and the Bill ordered to be read a third time.

The Petroleum Bill was read a third time with the amendments, passed, and sent to the Commons.

Thursday, July 24.

The Petroleum Bill was returned from the Commons with the amendments agreed to.

The Police and Improvement (Scotland) Bill was read a third time with the amendments. Further amendments were then made, and the Bill passed and sent to the Commons.

Parochial Assessments Bill.—The Duke of Newcastle, in moving the second reading of this Bill, said that a select committee of their lordships House was appointed in 1850, which took evidence and made a report on this subject. A Bill was introduced shortly afterwards to carry out the recommendations of the committee, but, as the machinery was not acceptable, the measure was dropped, and the subject was not revived for many years. The difference, however, between the real value, and the rateable value of property in many parishes was so great, amounting to as much as 20, 30, and even 50 per cent., that a more equitable assessment was greatly to be desired. Mr. P. Scrope's Bill was, to a certain extent, a remedy for this inequality, but the overseers of parishes had, in many cases through carelessness, and sometimes from a worse motive, made untrue returns, and so long as the overseers made the statutory declarations required under that Act, the magistrates were bound to give effect to those declarations. Recent legislation had, however, rendered absolutely necessary that which was before desirable. Certain establishment charges and expenses of the irremoveable poor were last year removed from the parishes, and thrown upon the unions. Some uniform rating of the parishes composing the unions was, therefore, generally demanded, and the more so because one-third of the unions of England contained parishes in two different counties, in which a distinct mode of assessment usually prevailed. It was proposed that the poor-law guardians of the union should select from their body a committee to be called an Assessment Committee, consisting of not less than six and not more than twelve guardians, one-third of whom should be *ex officio*. It was by no means intended to introduce the principle of union rating in this Bill. The assessments would be simply parochial, and a right of appeal was given not only to individual ratepayers, but to parishes of the same union. The Bill, after having been framed, was sent down to every union in the country, and had met with the general approval of boards of guardians. As their lordships would have an opportunity of expressing their opinions on the details of the measure in committee, he would only now ask them to give the Bill a second reading.

Lord Portman, having been a member of the select committee in 1850, could bear his testimony as to the necessity of a more uniform and equitable system of parochial assessment. He believed the measure would do a great deal of good, but certain amendments would have to be made in committee in order to render it entirely satisfactory.

The Marquis of Bath was sorry to be obliged to differ from the noble duke, and the noble lord who had just spoken. The object sought to be achieved by this Bill was a very limited one, and not at all commensurate with the trouble and expense which the working out of the measure would involve.

Lord Redesdale thought the Bill required very careful consideration. He did not think it would be found that guardians would be found to give up a great deal of time to making a revision of the assessments in their several unions. He thought the Bill a very proper one to refer to a select committee, as it required more attention than their lordships at this period of the session could possibly give. In its present shape, it was one which excited considerable apprehension in the country.

Lord Egerton of Tatton said it was of the utmost importance to secure a good system of rating; but in many respects, he believed that the present was not a practical measure. It would be wise, therefore, to withdraw it, and to introduce another measure next session.

The Duke of Newcastle said the House ought not to regard this measure as a hasty piece of legislation, seeing that the subject had engaged their lordships attention for the last twenty years. Those who objected to the proposal as the first step towards union rating forgot that the first step was taken last year, and that this Bill was merely introduced to remedy defects in the working of the former measure. Instead of exciting those apprehensions of which the noble and learned lord had spoken, the answers received from those boards of guardians which had replied to the circular sent out by the department, were, he believed, without exception, favourable to the Bill. In the objections which have been taken to the 15th clause, some slight misapprehension existed. The clause, in its present shape, was not originally included in the Bill; but was introduced on the motion of the honourable Member for Norfolk, under the impression that some difficulty and uncertainty would be thereby removed. The Government assented to the clause, believing that it did not alter the law, but only settled that which was unsettled before. Doubts, however, had since been raised, and apprehensions expressed with regard to its probable operation. The Government, therefore, would be willing to omit the clause; but, as this was a privilege Bill, they feared that the omission of the clause might imperil the passing of the measure. The following proviso had been submitted to those who objected to this clause, and had met with their approval:—"Provided that nothing herein contained shall repeal or interfere with the provisions contained in the 1st section of the said Act, 6th and 7th William IV., cap. 96, defining the net annual value." He himself thought it would be better to omit the clause, but that, it appeared, would be considered a breach of the privileges of the House of the Commons. That objection seemed to him to be rather a straining of the privileges of the other House. It was, at all events, a serious inconvenience, and he thought it would be desirable if possible to obtain from the House of Commons at the commencement of another session, by some friendly communication, a more accurate definition of what they considered to be their privileges in this respect, in order that it might be more clearly defined what were the obstacles to legislation in that House. (Hear, hear.)

After a few words from the Earl of Romney, who recommended delay in this matter,

The Bill was read a second time.

HOUSE OF COMMONS.

MONDAY, JULY 21, 1862.

The POLICE AND IMPROVEMENT (SCOTLAND) Bill.—A petition from Edinburgh against the Bill was presented.

WEDNESDAY, JULY 23.

The PETROLEUM Bill.—The Lords amendments were agreed to.

Miscellaneous News.

SIEMENS'S GAS-FURNACE.

ROYAL INSTITUTION, FRIDAY, JUNE 20.

The session of the Friday evening meetings of the members of the Royal Institution was brought to a close on the 20th ult., on which occasion Professor Faraday delivered a lecture on "Gas Glass-Furnaces, &c.," to a very crowded audience. He said he had been induced to select that subject in consequence of having, during a recent visit to Birmingham, witnessed the operation of Mr. Siemens's regenerative gas-furnace applied to the manufacture of glass, and noticed its many advantages. Professor Faraday gave a glowing description, in his wonted enthusiastic manner, of the appearance of the mass of white heat which the interior of the furnace presented, with its immense volume of intense fire, resembling the sun, though a closer inspection showed that it was made up of innumerable tongues of flame. After expatiating on the advantages which a gas-furnace possesses over furnaces in which solid incandescent fuel is employed, especially on its superior cleanliness, the greater amount of heat produced for the fuel consumed, and the facility with which it can be managed by a single man, he proceeded to explain the effects of heat and air on carbon, and exemplified the perfect combustion of that substance by igniting a piece of charcoal in oxygen gas. He next showed the different kinds of flame that may be produced during the combustion of carbon, depending on the different conditions in which it is burned, to illustrate which, charcoal powder was blown, under various circumstances, through the flame of a spirit-lamp. The remarkable difference in the products of the combustion of charcoal were exemplified by the production in one instance of carbonic acid, and in another, of carbonic oxide, the former of which extinguishes flame, while it is by the combustion of the latter that the intense heat in gas-furnaces is principally produced. The difference between the two kinds of gas he stated is occasioned by the different lengths of time that the carbon and oxygen "sojourn together" during combustion; and it is on the method of converting the carbon into carbonic oxide, and of afterwards applying the combustible property of that gas, that the principle of the gas glass-furnace depends. Large diagrams representing sections of Mr. Siemens's furnace were exhibited, in which the fuel was shown as descending an incline to the hearth of the fire-chamber, where it was kept in an incandescent state, to a depth of about two or three feet, by the admission of air at the bottom. The gases thus generated pass through the descending fuel, and the carbonic acid is converted into carbonic oxide; and, combined with the hydrogen and other gaseous products passes on to the furnace, where they are ignited by the regulated admission of jets of air. As a proof of the great economy of this means of applying fuel, Professor Faraday contrasted the amount of waste heat that escaped from the top of an ordinary furnace with the temperature of the issuing air in a gas-furnace; for, while abundance of flames issue forth from the former, the thermometer does not rise above 300° Fahr., at the top of the chimney of a gas-furnace. The regenerative principle, by the application of which this economical result is obtained, was explained by Professor Faraday to be similar to that of a respirator, which is heated by the breath exhaled, and, at the next inspiration, imparts the heat to the air as it passes through the folds of wire-gauze. He stated that, assuming the heat generated by the perfect combustion of carbon when resolved into carbonic acid to be 4000°, the heat produced when an equal quantity was resolved into carbonic oxide was only 1200°; therefore, in the latter case, about 2800° were carried forward to the regenerator, and about 1200° were used in the furnace. Each furnace contains four chambers, made of fire-bricks, which are so arranged that the 2800° of heat pass through them successively; and, as the fire-bricks become heated at the bottom, a kind of turn-table, or four-way-cock, directs the current up one passage and down the other, and then reverses the current as the chambers become heated, and produces a constant economy of heat. It is estimated that by this regenerative action 3000° of the heat are returned to the furnace, and that the whole heating effect in the fire-chamber would be equal to 7000°, which is much greater than is ever required, for white heat is about the temperature of 3000°, and melting steel heat 4000°. In the glass gas-furnaces, constructed on Mr. Siemens's plan, there are eight melting-pots in each of the four chambers, each pot containing as much as two tons of molten glass. Owing to the cleanliness of the process, there is no necessity to cover the pots, and the glass can consquently be worked with much greater facility. Another important advantage in the manufacture of glass is, the regulation of the heat that can be commanded in gas-furnaces, for a great deal of the beauty of the material depends on the heat employed during the process. For other purposes, also, these furnaces, he said, are superior to those in which solid fuel is employed; and, among those uses to which they are especially applicable, the puddling of iron and the welding of wrought-iron tubes were mentioned. In concluding his lecture, Professor Faraday alluded, in a manner that greatly affected his audience, to the loss of memory that he now experiences. There was a time, he observed, when he considered the faculty of memory as of less value than others; but, its loss had taught him how much all mental action depends upon it. He now often found himself traversing the ground that had been gone over by himself and by others, thinking it was new, and he had abandoned the expectation of being able to pursue successfully any new investigations. He could not now even trust his memory sufficiently to lecture without copious notes. Though complaining of his loss of memory, Professor Faraday's vigour and activity seem yet to be little impaired. The applause at the conclusion of the lecture was enthusiastic.

EUROPEAN GAS COMPANY.

The Annual General Meeting of the Proprietors of this Company was held on Monday, the 14th of July last, at the offices of the company, Old Jewry, London—SHEFFIELD NEAVE, Esq., in the chair.

The notice convening the meeting was read, and the minutes of the preceding meeting having been read and confirmed,

The SECRETARY read the following report:—

Amiens.—Increase of lights during the year, 544. Notwithstanding the precautions taken to lay in a stock of coals early in the year, your directors were only able to make the necessary provisions at the expense of a considerable rise in the rates of freight, owing to the continued and increasing dislike of shipowners to the port of St. Valery, where ships, carrying English coals intended for Amiens, are discharged. Had it not been for this drawback, the profits would nearly have equalled the amount of the previous year, although so many factories have, for a time, ceased to consume gas in consequence of the bad state of trade. The additional consumption from new lights has, however, nearly compensated for the temporary falling-off in that of the industrial establishments; and, in order to meet these growing requirements, it will be necessary to provide a third gasholder and tank in the course of the ensuing year.

Boulogne.—Increase of lights during the year, 999. The limited producing, storing, and distributing power here, at the disposal of your directors, has not permitted such advantageous working as might otherwise have been attained, but the increased demand for gas, which has been considerable, has overtaken the means of supply earlier than was expected, your directors having, with a view to economy, deferred the outlay of new capital until it can now no longer be avoided. They have determined to lay out at once a new independent 10-inch main on a length of about 700 yards, for the lighting of the Capécure district. The present leading main will thus be relieved to an important extent. Your directors referred, in their last report, to the necessity of preparing for considerable outlay next year for extending the retort-house, telescoping the large gasholder and providing additional coal-storeage. The important works in hand at other stations prevent the immediate realization of these plans, which cannot be carried out until the early part of next year.

Caen.—Increase of lights during the year, 648. The local financial crisis which occurred here last winter, owing to the failure of several bankers and the loss consequently suffered by persons engaged in business, has occasioned a temporary check to the immediate increase of the company's operations in this town, but it may reasonably be expected that this unfavourable effect will, with the occasion, speedily pass away. The execution of the projected extensions of works, already mentioned in the February report, cannot, therefore, safely be deferred beyond this year. The new tank and gasholder are not yet quite ready for use, but it is expected that they will be brought into operation very shortly.

Havre and St. Adresse.—Increase of lights during the year, 2187. The profits returned for the year 1860-61 included all the advantage derived from working the whole town, throughout the six winter months, when by far the greater portion of the profits of a gas company are made. Upon comparison, however, of the whole year, there would have been no decrease of profit, if circumstances had not arisen which are in themselves quite exceptional. It must be borne in mind that this town is greatly dependent upon the cotton trade of France, and that the effects of the American war have been felt more disastrously here than in any other town, except such as Rouen, where factories are established in more considerable numbers. Business has been nearly stationary for several months; and, had it not been for the consumption of gas by a large number of new lights, the interests of this company would, no doubt, have suffered severely. The peculiar difficulties of the year, incident to this station, have been considerable; the removal of the manufacture of gas from the old works and the suppression of the works of the French company; the continuance of construction, and at the same time the use of entirely new works have occasioned a state of transition most unfavourable to good manipulation, and this has been greatly aggravated both by the fire at the old works of the company and the accident to the roof of the new retort-house. The outlay for the complete transformation of the works of the late French company has necessarily been very large, and has greatly exceeded the estimate made by the engineer. Further capital must be expended to provide adequately for the expected increase of business which will certainly take place as soon as the trade of the town shall revive.

Nantes.—Increase of lights during the year, 2929. It was explained in the last report that the French importation of English grain, in the place of the usual exportation of flour to England, had so disturbed the regular employment of a large number of ships of this port, that your directors had at times great difficulty in obtaining vessels for the conveyance of coals, even at high rates of freight. The effect on the accounts has been most depressing, and has increased the cost of coals 3s. 2d. per ton, which, on 8862 tons consumed during the year, amounts to the large sum of £1400. Had it not been for this unsual state of the freight market the profits would have shown an improvement in proportion to the large increase of consumption. In order to provide for pressing requirements, your directors have found it necessary to purchase a property adjoining the works, the cost of which, with expenses, will amount to about £4600. They are also having plans prepared for building a new retort-house; providing a new gasholder and tank, 90 feet in diameter and 25 feet deep, and otherwise extending the works and means of distributing gas. The repairs and alterations of the works and mains during the year having been much above the average, your directors have considered it advisable to distribute a portion of the excess—say £360—as a charge on the current year.

Rouen and Sotteville.—Increase of lights during the year, 751. Considering that the cotton manufacturers, who are the principal customers of this company, have, for several months past, ceased to consume gas, the result cannot be viewed as unsatisfactory. It would, doubtless, have been worse, had not the new lights obtained gone some way towards compensating for the great falling-off in the ordinary consumption. A large and sudden increase must be looked for as soon as this town shall recover the activity of business which has been so completely deranged by American affairs. In order to be prepared for this, and for the increase of lighting accruing from the new mains, laid at the expense of the authorities, your directors have already commenced the extensions referred to in the last report, and which will require considerable outlay before they can be completed. At this station, also, the amounts paid during the year on account of wear and tear have been very large, owing, principally, to a combination of circumstances having rendered it necessary to reset nearly all the retorts within the twelve months. In order to avoid charging one year unduly with this heavy expense, your directors have, as heretofore, under similar circumstances, appropriated to the past year the portion which it should properly bear, and have taken the balance from the special wear and tear fund in hand, to be returned in the following year, which will thus be made to take its just share of charges, as it will also have derived the benefit of the expenditure in question.

Summary.—Increase of lights during the year, 8058. The total net profit is sufficient to cover the dividend of 8s. per share paid in February last, and to pay a similar sum on the 1st of August next, together with a bonus of 4s. per share, the whole being at the same rate as in the previous year. After providing for this, a sum of £54. 11s. 11d. will remain to be added to the balance of profit and loss, or reserve-fund.

As, notwithstanding the serious and exceptional difficulties of the past year, your directors have been enabled to maintain the division of profits at the same rate as that made on the last occasion, they confidently point to this proof of growing prosperity, which, upon the removal of these difficulties, and upon the revival of trade in France, will not only restore to the company the business which has thus temporarily been withdrawn, but also give a fresh impulse to the consumption of gas generally. Although this may not immediately take place, it cannot long be deferred, and in either case it is indispensable to be prepared for the event by judiciously laying out capital for the purpose of increasing the means of manufacture and supply. The present requirements must be viewed as wholly necessitated by the rapid enlargement of business and the entire success of the measures your directors have taken to create it, but which they admit they had not dared to anticipate would have been attended with such speedy results.

An Extraordinary General Meeting has been called for the purpose of recommending to the shareholders that the board be authorized to raise such new capital, and will be held immediately the present proceedings terminated.

Although this company had been admitted to sue and be sued in French courts of law, recent decisions of the judges in France had thrown doubts on the legal *status* of English joint-stock companies in that country. At the instance of your directors, a question was first put to Lord John Russell in Parliament, at which time, it appears, the Board of Trade had not had their attention called to the subject. Application was made to the Minister of Commerce to recognize specially the European

company as having established claims to corporate rights in France. He was disinclined to deal with special interests, but stated that he was not unwilling to settle the question, and would take into consideration some general measure applicable to all English companies, with reciprocity for French companies in England. At the same time, he required such information regarding the laws of England relating to joint-stock companies and particularly the Limited Liability Acts as would enable him to appreciate the position. Nearly the whole of the said Acts were translated for him, and opinions were obtained, by meetings at chambers of the Attorney-General, as also those of the best lawyers in Paris on both sides of the subject, and it is not displeasing to see that the minister has availed himself of the labours of your officers to found on them a project of law for the creation of a new class of limited liability companies in France.

The chairman, having gone over to Paris with letters from the Foreign Office, had conference with the British Ambassador and Minister of Commerce, and endeavoured to put the matter in train for further discussion; on his return communicating with the Foreign Office and Board of Trade, whilst negotiations were promptly set on foot between the two countries.

Your directors are happy to report that a convention between the two Governments was signed on the 30th of April last, and English joint-stock companies are now unquestionably authorized to sue and be sued in France, and to exercise all other civil rights.

It may, perhaps, be not unworthy of remark, that though some parties interested in banks began to take part in calling the attention of the Foreign Office to their position, the credit of obtaining the general measure, and thereby similar advantages for other English companies, as was encouragingly observed to the chairman by the Minister of Commerce himself, may be taken as clearly due to the initiative of this company.

Notice has been given, that two of your directors (Sheffield Neave and Thomas Winkworth, Esqrs.), and both auditors (Felix Ladbroke and John Moxon, Esqrs.) retire by rotation, but all, being eligible, will be proposed for re-election.

The CHAIRMAN then rose and said: Gentlemen, as regards the report, it seems to have two leading features—first, an announcement of the difficulties we have had to go through; and, happily, the second is proof and evidence of the prosperity which we have secured, and by which we have been enabled to counterbalance, in a measure, the difficulties which we have mentioned to you. That France should have suffered as England has from the American war, is, of course, not surprising to any one here present. If there has been a large depression in our own country, in France, perhaps, it would be likely to be felt more than by us, because, they have not quite such large means of meeting the difficulty. Such has been the case, and we find that in all our towns business has been very much reduced. The consumption by the old lights has been certainly greatly less, and all are complaining of a want of business. I myself looked forward at one time to our being unable to obtain such a revenue as to keep up the dividend where it was; but, if the difficulties have been great, there has been, coextensive with them, an increase in our general business. We, some years ago, acquired these settlements with various towns for fifty years, but, with a stipulation for a great reduction in price. That reduction in price has materially increased the demand for gas, and it has gone on even in the midst of all our difficulties, still increasing to the enormous extent which we have this day shown you, by the number of lights. That must prove to us that there is an inherent vigour in our concern, which, notwithstanding the cloud that was over us, has enabled us to advance in the amount of our business. That must be satisfactory to all and each I think, and, on that account, we speak of the necessity of more capital. I admit that I did not expect to want the capital so soon. I thought we could have gone on gradually improving, but I had no idea that we should be—I may say, overwhelmed with a wave of prosperity, for it has come on much quicker than I thought. It is a subject of congratulation that it is so, but it entails the necessity of making further calls for money, which, I have no doubt, the proprietors will very cheerfully respond to. There is a mention made in the report of the successful application of capital. That, of course, would be an earnest of future success. I may notice that the addition to capital that we have made in the last three years has been sufficient to give us, while it has in itself been an increase of, perhaps, in round numbers, 37 per cent., an increase in lights of 68 per cent. It is, therefore, upon that ground, that we venture to come forward and encourage an increase of capital. I will keep, if you please, that subject apart, and confine myself to the working of the company, as we shall have a meeting immediately after the present, for discussing that question, and, perhaps, it would simplify our business very much if we divide the subjects. There is one thing more in the report, which is the last paragraph, which some of you may think rather lengthy, with regard to the laws regarding joint-stock companies in France. I think it right, especially as my name appears personally in it, that you should know what efforts have really been made to accomplish this. We have not merely sat down at our table, and wished it. It has been the object desired for some years. We have constantly asked opinions of French lawyers, for we felt anxious to know our actual position. We had taken all sorts of precautions, by making contracts in a way that would give us the power of enforcing them, but our general position as a company was in a doubtful state. We have mentioned to you, in the report, the details of the course by which we proceeded, beginning in Parliament, and then going over, and having direct intercourse with the Minister of Commerce in France, and taking a good deal of trouble in getting up information here. I had conferences with the Attorney-General here in chambers, in order to get an opinion in a particular shape before the minister; and, by that means, we brought his mind to bear on the subject. Willing, as I have no doubt the Emperor was throughout, to encourage the introduction of English capital into France, it costs a good deal of trouble and time to bring all these points to bear. The Minister of Commerce being willing to pass a general measure, our Government met him upon it, and the result is what we have told you to-day. I think it is due to the board generally, to let you know that they have not slept on their posts. It makes a very vast difference in our standing in France; and, although people may not be aware of the position we were in in that respect, they will now know that it is a very great advantage gained. We, of course, have the still further pleasure of seeing that it has led to a joint measure between the two Governments. Gentlemen, I do not know that I have at present anything more to add, but I will move—"That the report of the directors now read, be received and adopted."

Mr. W. T. FAWCETT seconded the motion.

Mr. G. W. SMITH inquired whether there was really any objection to having the reports printed and sent to the shareholders, as was the case in many other companies, previous to the meeting, because, if what they had heard read that day was good, so much the better for them. They could not judge of the force of all that they had heard in the very few minutes they were there. He was well aware that they had the opportunity of coming there beforehand; but, if there was no objection to the printing of the report, it would be a satisfaction to him, and, he believed, to several other shareholders, if that were done. He had every confidence in the gentlemen at the board, and was only to happy too be connected with a company like the European, for he happened to be a shareholder in other companies, where the concerns were not managed quite so favourably.

The CHAIRMAN said as it had been frequently discussed in that room whether or not they should publish their accounts, and as it had always been held that they were a foreign company, subject to all sorts of difficulties and misapprehensions, which could not be thoroughly removed as they could be in this country, and as it had always been thought advisable (and he was quite sure that up to that moment it had worked very advantageously) that they should not do so, still the directors were in the hands of the proprietors, and, if they ruled otherwise, of course it would be done.

Mr. G. W. SMITH said he would not propose it.

The CHAIRMAN said that there had been times when he thought it would be very inconvenient; and, viewing the difference between a foreign company and an English company, probably they would be of opinion that the remarks he had made were not irrelevant.

The resolution for the adoption of the report passed unanimously.

A resolution authorizing the payment of a dividend of 8s. per share, and a bonus of 4s., passed *nem. dis.*

The retiring directors, Sheffield Neave, Esq., and Thomas Winkworth, Esq., were unanimously re-elected.

The CHAIRMAN said he could only say that, having been a director for the company from its very infancy, which was now since the year 1834 or 1836, they might naturally suppose he took some interest in his own child, and that he would continue to do his utmost to promote the interest of the company.

Mr. WINKWORTH rose for the purpose of thanking the proprietors for their renewed expression of their good opinion, and said he shared with his co-directors the very flattering way in which Mr. Fawcett and other gentlemen had been pleased to speak of their services. He need not say that they were exceedingly onerous and delicate, but such as they were from the manner in which they were appreciated by the shareholders, they did feel exceedingly encouraged, and believed that the shareholders had not placed confidence in them that they did not deserve. At any rate, such was the way they flattered themselves. The manner in which the proprietors were informed in the report of the increasing business which had resulted from the capital from time to time invested, showed that their concern did not stand upon an insecure basis; and if, as they hoped, in a short time, from present appearances, the incubus which had been upon the trade of France as well of this country should be removed by the American difficulties being settled, he thought they might fairly congratulate themselves upon having in the vista something like the prospect which had been shadowed forth in the report.

The retiring auditors, Felix Ladbroke, Esq., and John Moxon, Esq., were then unanimously re-elected.

Mr. MOXON said he regretted very much the absence of his colleague, Mr. Ladbroke that day; but he would say that upon all occasions when they had to go into the accounts of the company, they were bound to congratulate themselves upon the appearance of exactness and neatness with which the accounts were kept. They had attended for about twenty-six or twenty-seven years, and, therefore, they had experience of the accounts for a pretty long time, and all he could say in thanking the proprietors for their kindness in re-electing them was that he hoped the prosperity of the company would go on increasing as it seemed to do by the increasing number of lights they had in the various towns.

An Extraordinary General Meeting was then held for the purpose of considering the best mode of raising a sum not exceeding £50,000, to meet the expenses necessitated by the increasing business of the company.

Mr. HUGGINS objected to any further sum being raised by way of bonds, and suggested the issue of preference shares.

Mr. BEDDOME (the solicitor) said he did not know that a case had ever arisen in the courts in which a limited liability company had proposed to issue preference shares; and he doubted the power of a limited liability company to do so, seeing that the Legislature, in the Act, had seemed only to contemplate all the proprietors sharing equally in the profits of the company.

Mr. FAWCETT was of opinion that the best mode of raising the money required would be by the issue of ordinary shares to the extent of 12,000, making calls upon them as occasion required.

The CHAIRMAN said that, having heard the opinion of the proprietors, the board would consider the subject, and call another meeting, at which the directors would state to the proprietors the result of their deliberations upon the subject, and ask the shareholders to sanction what the board should propose.

Mr. HUGGINS would be very glad to leave it to the board.

A cordial vote of thanks having been unanimously accorded to the chairman, board of directors, secretary, and consulting engineer, the proceedings terminated.

METROPOLIS GAS SUPPLY.

CITY COURT OF SEWERS, GUILDHALL, TUESDAY, JULY 15.

At the Meeting of the Commission this day—Mr. DE JERSEY in the chair—a report was presented from the General Purposes Committee, which stated that, with regard to the question of ascertaining by experiment the desirability of buying gas by meter for the public lamps, and determining the questions now in dispute between the gas company and the Carburating Company, the committee were of opinion that the engineer should be instructed to procure five dozen meters, and affix them to such of the public lamps as appeared to be best calculated to check the consumption of gas generally therein; and to employ a competent person to superintend the meters, and record the result. The committee further recommended that the Commissioner of Police be informed thereof, and be requested to direct the attention of the police constables specially thereto, and that on any complaint of deficiency of light, the medical officer should analyze the naphtha in the carburator, and report thereon. With regard to the application made at the last court by the United Kingdom Carburating Company for payment of a sum of £250 on account of work done under their contract, the committee recommended that that amount be paid.

The CHAIRMAN, in moving the adoption of the report, said the committee had advised the commission to try the experiment, which would not cost much, before they came to a decision on the questions submitted to them, and which, he need hardly say, were rather involved.

The report was accordingly adopted.

TUESDAY, JULY 22.

At the Meeting of the Commissioners this day, the following report was presented from the General Purposes Committee:—

To the Honourable Commissioners of Sewers of the City of London.

We, whose names are hereunto set, your committee on General Purposes, to whom the various questions on the Metropolis Gas Act 1860 are referred, beg to report to your honourable court, that we have had a conference with the chairmen of the City, Chartered, and Great Central Gas Companies upon the subject of fixing on one central place where the gas of the said several companies may be tested, and we have arranged with them to the following effect:—

First, that a house, or part of a house be taken for a testing-place, in which the gas of all the companies supplying the City shall be tested, and that the same shall be at or near Aldgate, to which the mains of the four companies shall be brought.

Second, that the cost of renting the same, and of fitting it up with the needful apparatus, shall be defrayed in equal moieties, one by the commissioners, and the other by the gas companies.

Third, that the gas companies shall have free access, by any duly authorized persons, to witness Dr. Letheby's experiments in testing their gas.

We have instructed the engineer and Dr. Letheby to look out for suitable premises for the purpose in question, and to report.

With regard to the numerous openings recently made in the public pavements by the Great Central Gas Company, and the Chartered Gas Company, referred to us to inquire into, and to report, we find from your inspectors' reports, that the number of these openings so made between April 1, and the end of June, was as follows:—

By the Great Central Gas Company	3053
By the Chartered Gas Company	211

We instructed the clerk to apply to these companies for an explanation of their proceedings, and we have received their replies.

The Great Central Gas Company state that having, in the year 1850, obtained your permission to lay down their pipes, &c., they had done so, and had laid down a very large number of services under the expectation of custom, which expectation had not been realized. That these services having become leaky, considerable danger was apprehended, unless drawn before they became further defective by rust, &c., and, for this purpose, the large number of openings above mentioned were made.

The Chartered Gas Company state, that the various openings made by them were for the purpose of disconnecting old, defective, and disused services, which were in a leaky and dangerous state. Both companies state that notice was given at your office, in all cases, at or after the time the work was done, but not previous thereto, which statement is confirmed by your inspectors; and the companies claim to have been justified in so acting, as these were matters of emergency.

We, however, are of opinion that 3053 openings could not simultaneously have become thus emergent, and, if they were not so, previous notice should have been given, and the consent of the commissioners asked.

We beg further to express our opinion that this practice of the gas companies, of not sending notice of such works until after begun, and in some cases completed, and which practice seems to have been adopted for several years past, is much to be reprehended. We do not, however, under all circumstances, advise proceedings to be taken against the companies for these past proceedings, but we do recommend that they be called upon hereafter to conform strictly with the provisions of the Act of Parliament in reference thereto.

We have examined the following bills, and recommend that the same be paid.

Gas Measures Act.

J. M'Carter, covers for gasholders (June 7, 1862)	£38	10	0
B. Scott, rent of gas office (1860, Midsummer, to 1862, Midsummer)	101	5	0
R. Gravatt, stationery (April 8 to June 18)	5	10	4
Great Central Gas Company, gas supplied to meter testing-place (March 17, 1862)	33	8	3

With regard to the application of Messrs. J. and J. Hadley to lay down pipeage under the pavement of Huish Court and Bristow Street, to carry a new description of gas manufactured at the rear of their premises, No. 4, Earl Street, to the City Flour Mills, we are of opinion, that inasmuch as the experiment about to be made by Messrs. Hadley may lead to a more economical system in the lighting of the public lamps, permission should be given to lay down the said pipeage under the direction of your engineer, and to continue during the pleasure of the commission.

The CHAIRMAN, in moving the adoption of the report, said in reference to the arrangement proposed in the first part of it, that he hoped it would be the means of getting rid of a very troublesome question.

Deputy LOTT said, on a recent occasion he presented a memorial, complaining of the defective state of the public lighting in his ward. He wished now to state that the evil had been got rid of by the removal of the carburators, which he designated "jacks in the box," so that the lamps burned brilliantly.

Mr. SAUNDERS said he did not desire to interfere with the recommendation of the committee, that no proceedings should be taken against the gas companies for opening trenches in the public pavements without notice; but he could not help reminding the commission that when on a recent occasion it was proposed to make a change in the public lighting contract, it was regarded as positively preposterous, because it would necessitate the alteration of 1700 services. He hoped on any similar occasion in future the commission would not be so thin-skinned, after having allowed the gas companies to make more than double that number of openings with impunity.

Deputy LOTT said his friend, as a philosopher, ought to know that this was only the common course of things. It was the bold, resolute, and dominant men who did as they pleased.

Mr. C. YOUNG said the only question was, whether any damage had been done to the pavements by these proceedings of the gas companies? If there had been, they ought to be called on to reinstate them. He had seen many stones broken, and the pavements relaid in a defective state.

The CHAIRMAN said the pavements were made good from time to time as the work proceeded. If any portion was left in a defective state, it was the fault of their own inspectors.

The report was then adopted.

ST. OLAVE'S DISTRICT BOARD, TUESDAY, JULY 15.

A letter from Rotherhithe Vestry stated that they had discontinued contributing towards the expenses of testing the gas, considering it unnecessary to continue the process any longer, as they thought the object arrived at had been accomplished. The letter also stated that under the circumstances the clerk advised the vestry that any further contributions would be illegal.

Mr. WALKER said, the letter was a mere excuse. He moved—"That it be referred to the Gas Committee, to confer with the Rotherhithe vestry," and he thought they would be able to show them that it was still as necessary as ever to submit the gas to the process of testing.

Mr. SHAND seconded the motion, which was carried.

WANDSWORTH DISTRICT BOARD, WEDNESDAY, JULY 16.

The CLERK read a letter from Mr. E. Hare, vestry-clerk of Putney, enclosing a letter he had received from Mr. Lee, complaining that several public lamps in Putney had not been lit for several nights, and also complaining that the gas supplied by the Wandsworth Company was of a most inferior quality.

Mr. HARE said, that he could quite corroborate the statement made by Mr. Lee.

The CHAIRMAN remarked that the board were in this difficulty; as regarded the Wandsworth Company, they had no control over it.

Mr. METCALF hoped that this complaint would be referred to the gas examiner for report.

The CHAIRMAN did not think this would produce any beneficial result. The examiner had already reported that the gas supplied by the company was worse than any other gas supplied to the district. He suggested that a letter should be written to the company, asking to know the reason why these lamps were not lighted.

Mr. NEATE said, was he to understand that the board had not any control over the gas company in lighting the public lamps?

The CLERK replied that that was so: the company might at any time refuse to light them.

Mr. NEATE would rather the company refuse to supply the public lamps, and then something would be done. Surely, when the lamps were not lit, the board was not bound to pay for them.

The CLERK said, no doubt the board would not be bound to pay for the lamps not lighted, but the difficulty would be to establish a case.

Mr. NEATE then moved—"That the complaints should be referred to the examiner for report."

Mr. METCALF seconded.

Mr. WILLIAMSON said, it should be borne in mind that this company had leased the works to one individual, so that the directors had no power of interfering, unless the dividend was not paid as agreed upon. He suggested that a letter should be written to Mr. Spice.

Mr. DAVIDSON said that, if they had a report from the examiner, it would get into the newspapers, and so before the public. This might have some moral weight, and so they would get a better supply.

The motion was then put and agreed to.

A report was read by Mr. F. W. BEAUMONT, gas examiner, stating that the illuminating power of the gas of the Phœnix Company was, at their testing-house, in Wellington Street, equal to 14·26 sperm candles, and at Kennington Lane, 14·6. There was less alkaline in it than formerly. The Wandsworth Company's gas contained a most reprehensible quantity of ammonia; that of the Brentford Company was less pure than formerly, and the Mitcham had relapsed into its former state. The examiner also asked to be furnished with four meters, in addition to the two he already possessed, in order that he might be better able to carry on his experiments.

Mr. TOLCHER said, that although he opposed the appointment of Mr. Beaumont, yet, after his election, he felt bound to support in providing him the proper materials to carry out the duties of his office. He then moved that the four additional meters be obtained.

After a long discussion the motion was negatived.

THE GAS-METER QUESTION IN SHEFFIELD.

At the usual Fortnightly Meeting of the Sheffield Highway Board, held on Wednesday, the 16th inst.—Mr. Alderman SAUNDERS in the chair—the chairman detailed the result of the recent proceedings before the magistrates, when the gas company were fined 20s. for neglecting to supply the highway board with gas, when requested so to do in accordance with the provisions of the Sales of Gas Act. The chairman afterwards alluded to a fresh difficulty which had arisen with the gas company. After the decision of the magistrates, the gas company applied for the usual permission to open the street in order to lay a service-pipe to the offices of the highway board. Permission was given, and on Monday, the 7th, arrangements were made to commence operations on the following morning, at nine, or half-past nine o'clock, in the presence of Mr. Chapman. When that time arrived, however, the chairman and Mr. Chapman were both astonished to find that the gas company's men had completed their work and departed. On asking the carter, who lives on the premises, how the matter could be explained, they were informed that the company's men had been working all the night. The men had first dug a large hole, then built of brick a square compartment, into which they fixed a meter, and then secured it with a strong trap-door, taking away with them the key. Mr. Unwin himself came about four o'clock in the morning, and superintended the work going on. This proceeding the chairman, in his remarks to the meeting last night, designated as most extraordinary, for not only had the company illegally taken possession of the street, but they had taken away the flags which had been taken up to make room for the trap-door. He felt confident that there was not a single director of the gas company but would repudiate the proceeding. No doubt Mr. Unwin had fixed his own meter as a check against the board's meter, but it was quite unnecessary, for at any time, by giving proper notice, he could have the board's meter tested for 1s. It was a strange proceeding altogether. The Encroachment Committee had had a meeting in reference to the matter, and had unanimously agreed to the following report:—

With regard to the vault and trap-door fixed by the gas company, in front of the board's premises in Bower Spring, your committee recommend the board to apply to the magistrates, for a summons against the Sheffield United Gaslight Company for a breach of the Highway Act, or for trespassing on the board's property in Bower Spring, on Tuesday, July 8, 1862, between the hours of twelve and six a.m., by taking up a flag from the footpath there, excavating the ground, erecting walls underneath the said footway, and fixing instead of the said flag a wooden trap-door, and locking and fastening the same trap-door, and taking away the key.

Mr. PALFREYMAN proposed, and Mr. HARRISON seconded the adoption of the report, and, with the exception of a few words of opposition from Mr. HEALD, it was unanimously agreed to.

A subsequent resolution instructed the surveyor, under the advice of Mr. Fretson, to take out a summons immediately.

THE PETROLEUM OIL TRADE IN CANADA.

One of the most important measures that could be devised for the promotion of the interests of the oilmen of Canada, as well as the safety and well-being of the people, would be an inspection law for petroleum, requiring every gallon to be inspected by an authorized inspector, previous to being sold. There are several reasons why such a measure is all important, and almost indispensable. In the first place, it is well known that several of the States of the Union have recently passed a law requiring, under heavy penalties, the inspection of all petroleum-oils, before they go into the hands of the consumer. This, while it secures the lives and property of the citizens of those States, renders it infinitely more important that other States and other countries should pass similar laws; and for the very obvious reason that large quantities of worthless oils that cannot be disposed of at any price in those States where the law exists, will be sent to other States, and brought into competition with good oil; and the consumer, not knowing the difference, would, of course, buy the cheapest. There can be no doubt but every State in the Union where the oil is used will, at the earliest possible moment, follow the example of Ohio, Kentucky, &c., and protect themselves from the flood of worthless oils which will now be thrust upon them.

How important, then, that Canada should early adopt this very necessary measure of self-protection! It is required not only for the protection of the lives and property of our citizens, but for the protection and advancement of those who are expending their time and money in developing this great branch of our mineral resources. This country is already flooded with oil from Pennsylvania that is as inflammable and explosive as gunpowder, some of it having been known to explode at a temperature of 34° Fahr., whilst the Ohio law requires it to stand the test of 100°. Unless this measure is adopted by the Canadian Parliament, this state of facts will eventually operate to the exclusion of all good oils from this country, for not only will our own oil not be able to stand the competition with the oil they *dare* not use there, but, the demand for good oil there will take all of ours out of the country. Whereas, if such a measure were adopted, and not one drop of their oil allowed to pass the custom-house without the inspector's certificate of genuineness, our own refiners would be saved the competition with their worthless oils here, and, at the same time, be compelled to make an oil that will not endanger the lives

of those who use it, and the people will not be compelled to use an oil that they dare not use in the States.

Our tariff laws also need revision, for, as they now stand, they operate very unjustly and injuriously to our refiners here. If we wish to ship refined oil there, we are compelled to pay 10 cents. per gallon (and, in addition to that, there is a a bill now before Congress to make importers of oil into the United States pay an excise duty of 10 cents. per gallon), the same as the manufacturers there have to pay; so that as it is now, or will be then, we shall have to pay the United States this enormous duty, whilst they can ship their rejected and worse than worthless oils here without inspection, without paying the excise duty there, and are only charged 20 per cent. duty here on their oil, which they enter at the custom-house at about 15 cents. per gallon. This gives them an enormous advantage over us in the way of duties, and, at the same time, our oil will all have to be inspected before it can pass, whilst they can—as we before remarked—ship their rejected oil in here, and bring it into competition with a good, safe, and reliable oil, which will stand (as the most of our oil will) 100 to 130 degress of heat. Thus, they can undersell our Canada refiners, and the result would be, that Canada refiners would be broken down, good oil excluded, and the country deluged with the most dangerous compound that ever found its way into a lamp.—*Toronto Daily Leader.*

Dr. Hillier's Report on the Gas Supplied in St. Pancras.—The gas supplied by the Imperial Gas Company to this parish during the month of June has not been of such good quality as usual. On four different days, I have found it to fall below the standard of illuminating power required by the Act of Parliament. On one occasion, it was as low as 10½ candles—that is to say, the gas, when burned at the rate of 5 cubic per hour, with an argand burner of 15 holes, and a 7-inch chimney, gave a light equal only to 10½ sperm candles consuming 2 grains per minute; the Act requires that it should be equal to 12 such candles. The highest result obtained was an illuminating power of 13 candles, and the average was 12 candles. The burner which I used when I obtained the unfavourable results was the same employed in my observations last month, and one which entirely conforms to the requirements of the Act. I have been in communication both with Dr. Letheby and Dr. Thomson, and find that the burners which they have used both before and since the passing of the Metropolis Gas Act are such as to give results not at all more favourable to the gas than the one which I used. Dr. Letheby states that the burner contemplated by the framers of that Act was one such as he uses; and that the new large-holed lava-burners with diaphragm-valves introduced by the gas companies were not in use at that time; and their employment in testing he believes to be contrary to the spirit of the Act. It is of great importance that some steps should be taken to decide what burner shall be employed, and taken as the standard, because at present the results obtained by different examiners will vary in amount from 2 to 3 candles, according to the kind of burner which is used. It would be well that the matter should be taken into serious consideration by you; and that the matter should be once for all decided either by arbitration, by some amicable arrangement with the gas companies, or in whatever way may be considered best. It will be seen to be a question of very considerable importance when it is remembered that 4 feet of gas, tested by one burner, will give as much light as 5 feet of the same gas tested by the other burner. The quality of an article on which more than £12,000 is expended for the public lamps alone, independently of what is used for in-door purposes, cannot be a matter of indifference; and it is, of course, only just that the public should be supplied with it as good as the Act intended to secure it to them; nor can I suppose that the Imperial Gas Company have any wish to evade the Act, although they take different views about the burner from those entertained by most of the gas examiners appointed on behalf of the local boards. I have also to report that on six different days when examined for ammonia in the way prescribed by the Act, the gas gave manifest indications of the presence of that ingredient. The gas examined for carbonic acid was found to contain about 1½ per cent. of that compound, and 3½ per cent. of the condensible hydrocarbons. The pressure varied from 6 to 24/10ths of an inch.

The Water-Works Clauses Act.—The Court of Queen's Bench has expressed its opinion in the case of the *Sunderland and South Shields Water Company v. Acklam*, that where a house is divided into flats, with a common water-closet, the owner of the house ought to be rated as if each flat had its own water-closet. The question submitted to the court depended on the construction of the company's private Act, and the public Act.

Gas Explosion in St. Martin's Church, Leicester.—On Sunday evening, July 6, an explosion of gas took place in the above church, attended with considerable damage to the edifice, though, fortunately, no one was seriously hurt. It appears that after divine service was over, about eight o'clock, a considerable odour of gas was discovered near to the nave arch of the recently-constructed tower. Underneath this arch, we may state, there was on each side a platform, with altar, chairs, &c., where the communion service lessons were read from, in consequence of the extreme length of the church. On the smell of gas being perceived, the sexton applied a lighted match to the part from whence he suspected it came, and an explosion took place. The platform above mentioned was literally torn into pieces, as were three pews close at hand. One pew went with such a force against the string course moulding belonging to the tower as to break it off. The altar chair was sent against one of the corbels of the tower, a height of about eight feet, and, being smashed in its flight there, was knocked to atoms. The lantern was also broken. The damage done is covered by insurance in the Church of England office.

Great Central Gas Company.—Workmen's Annual Treat.—The usual summer excursions of the men employed at these works took place on the 7th and 14th insts. Accompanied by their own brass band in new uniform, they started at an early hour in the morning for Epping Forest. Dinner was provided for them at the Crown Inn, Loughton, and the days were spent in the most cheerful and happy manner, the admirable arrangements made by Mr. Hosslin, the superintendent, conducing much to the general comfort of the party. On the return of the men to the works in the evening, three cheers were given for the board of directors, Mr. Harris, the engineer, Mr. Hosslin, and other officers of the company. A musical performance by the band, under the direction of Messrs. Stephens and R. Carpenter, and a display of fireworks, closed each day's amusements.

Advertisements.

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That opinion has been endorsed by the jury in Class X. of the International Exhibition (several of them being eminent in science and engineering), having awarded the fac-simile of the National Standard and the other Gas Apparatus. Messrs. George Glover and Co. exhibit there the only medal for instruments relating to gas measurement which has been awarded in the Class. The award is for "*ingenuity, completeness, and efficiency of apparatus for measuring gas, and for excellence of material and workmanship.*"

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Share List of Gas Companies.

(Directors and Managers of Gas-Works are earnestly requested to enable us to rectify any errors and fill up the omissions in the following List.)

The Companies whose names are printed in italic type are incorporated by Act of Parliament.

No. of Shares issued.	Amount per Share.	Name of Company.	Amount paid up per Share.	Div. per Cent. per Annum.	Price per Share.
	£	**ENGLAND.**	£ s d	£ s d	£ s d
360	5	Aberavon (Lim.)	5 0 0	6 0 0	5 0 0
		Aberdare			
		Abergavenny			
400	5	Abergele (Lim.)	5 0 0	4 0 0	5 0 0
		Aberystwith			
530	10	Abingdon	10 0 0	6 0 0	12 0 0
1050	10	*Accrington Gas & Water*	10 0 0	& Bns.	15 0 0
1050	10	Do., new shares	10 0 0		15 0 0
2100	5	Do., do.	5 0 0		7 10 0
2100	5	Do., do.	1 0 0		1 10 0
2100	2½	Do., do.	0 10 0		0 15 0
1200	5	Airdale (Limited)	5 0 0	10 0 0	8 10 0
300	5	Do., new shares	0 10 0	8 0 0	
24	75	Alcester	75 0 0	4 0 0	80 0 0
128	10	Aldborough (Lim.)	10 0 0	5 0 0	
300	6	Alfreton	6 0 0	5 0 0	5 10 0
		Alnwick			
		Alston Moor			
250	10	Alton	10 0 0	10 0 0	12 0 0
1600	5	Altrincham	5 0 0	6 0 0	6 0 0
		Amersham			
170	10	Ampthill	10 0 0	4 0 0	9 0 0
350	10⅝	Andover	10 12 6	6 0 0	12 10 0
358	5	Appleby	5 0 0	2 10 0	2 15 0
230	10¾	Arundel	10 10 0	10 0 0	10 10 0
250	10	Ashbourne, Derby.	10 0 0	6 0 0	13 10 0
292	5	Ashburton	5 0 0	5 0 0	
84	30	Ashby-de-la-Zouch	30 0 0	6 0 0	
700	10	Ashford (Limited), Kent	10 0 0	6 0 0	11 10 0
1600	30	*Ashton-und-Lyne*	30 0 0	10 0 0	60 0 0
590	5	Atherstone	5 0 0	9 0 0	8 10 0
		Attleborough			
		Axminster			
200	20	Aylesbury	20 0 0	5 0 0	21 0 0
150	10	Aylsham (Limited), Norfolk	10 0 0	5 0 0	12 10 0
3093	10	*Bacup (Rossendale Union)* ordinary	10 0 0	& Bns. 6 10 0	16 0 0
600	10	Do., preference	10 0 0	6 10 0	16 0 0
2597	10	Do., new issue	4 0 0	6 10 0	8 0 0
300	5	Bakewell	5 0 0	5 0 0	8 0 0
200	10	Baldock	10 0 0	5 0 0	10 0 0
1000	10	Banbury (Limited)	10 0 0	7 10 0	15 0 0
2150	10	*Bangor Gas & Wr.*	10 0 0	5 0 0	10 0 0
		Barmouth (L.) £1500			
260	10	Barnard Castle	10 0 0	5 10 0	10 15 0
800	5	Barnet	5 0 0	6 0 0	5 10 0
		Barnsley £6000		7 10 0	
109	20	Barnstaple	20 0 0	7 10 0	
1138	2	Barton-on-Humber	2 0 0	& Bns. 5 0 0	2 0 0
120	25	Basingstoke	25 0 0	8 0 0	30 to 34
2500	16	*Bath*, A shares	16 0 0	8 0 0	38 0 0
2500	8	Do., B shares	8 0 0	7 0 0	united
2500	10	Do., C shares	8 0 0	7 0 0	12 0 0
		Battle £2000		6 0 0	
56	26⅔	Bawtry	26 12 6	6 0 0	25 0 0
		Beaminster			
710	10	*Beccles Gas & Wr.*	10 0 0	2 10 0	
		Bedale, Yorkshire			
300	30	Bedford	25 0 0	4 0 0	20 0 0
350	10	Bedworth	10 0 0	7 0 0	11 10 0
300	3	Belford	3 0 0		1 10 0
350	10	Belper	10 0 0	10 0 0	14 0 0
		Berkeley			
		Berkhampstead			
1086	10	Berwick & Tweedmouth	10 0 0	7 0 0	13 10 0
120	20	Bewdley	16 0 0	5 0 0	16 0 0
200	10	Bicester	10 0 0	5 10 0	11 0 0
330	10	Bideford	10 0 0	6 0 0	10 10 0
		Biggleswade			
		Billericay			
5000	5	*Bilston*	5 0 0	8 0 0	7 12 6
200	10	Bingham	10 0 0	4 0 0	
		Bingley £7400		4 0 0	
1200	80	*Birmingham*, A sh.	80 0 0	9 0 0	144 10 0
400	8	Do., B shares	8 0 0	9 0 0	14 10 0
2500	40	Do., new shares	40 0 0	7 10 0	60 5 0
1250	40	Do., do.	5 0 0	7 10 0	13 0 0
2400	50	*Birmnghm. & Staff.*	50 0 0	10 0 0	100 0 0
2400	25	Do., new shares	25 0 0	10 0 0	50 0 0
7020	20	Do., do.	20 0 0	10 0 0	40 0 0
12500	28	Do., do.	1 0 0	7 10 0	4 2 6
250	16	Birstall	12 0 0	12*s.* 6*d.* per sh.	12 0 0
		Bishop's Auckland			
180	10	Bishop's Castle	10 0 0	5 0 0	10 0 0
230	10	Bishop's Stortford	10 0 0	5 0 0	10 0 0
6000	15	*Blackburn*, A sh.	15 0 0	9 0 0	27 0 0
6900	15	Do., B shares	2 0 0	6 15 0	3 10 0
		Blaenavon G. & W.			
		Blandford			
		Blyth & Cowpen			
		Bodmin			
		Bognor			
100	10	Bolsover	10 0 0		10 0 0
3909	16⅔	*Bolton*	16 10 0	10 0 0	40 0 0
7466	16⅔	Do., new shares	3 10 0	6 10 0	5 5 0
		Boroughbridge (Lim.) £15,000			
800	10	*Boston*	10 0 0	8 10 0	
1200	10	Do., new shares		8 10 0	
		Botesdale, Suffolk			
200	5	Boughton Blean	5 0 0	5 0 0	5 0 0
193	10	Bourn	10 0 0	5 0 0	
		Bournemouth Gs. & Wr. (L.) £10,000			
160	10	Brackley	10 0 0	6 0 0	10 0 0
		Bradford, Wilts			
	25	*Bradford, Yorksh.*	25 0 0	10 0 0	49 0 0
		Braintree			
		Brampton, Cumb.			
		Brandon, Suffolk			
575	10	Brecon (Limited)	10 0 0	10 0 0	17 0 0
89700	Sk.	*Brentford*	All.	5 10 0	100 0 0
1340	20	Do., preference	20 0 0	5 0 0	20 0 0
609	20	Do.	3 0 0	5 0 0	3 0 0
		Brentwood			
		Bridge, near Cant.			
		Bridge-end, Glam.			
		Bridgnrth (L.) £5000			
200	50	*Bridgwater*	50 0 0	7 0 0	50 0 0
400	10	Bridlington	10 0 0	7 10 0	12 10 0
450	10	Bridport	10 0 0	7 10 0	
6000	5	*Brierly Hill*	5 0 0	4 0 0	5 2 6
		Brigg			
3375	20	*Brighton*	20 0 0	7 0 0	28 to 29
4015	20	*Brighton & Hove*	20 0 0	6 0 0	28 to 29
		Brmsembe. & Chalford. (L.) £3000		& Bns.	
91250	Sk.	*Bristol United*	Stock.	9 0 0	178 to 180
300	5	Briton-ferry	5 0 0		
150	8	Brixham	8 0 0	5 0 0	
		Broadstairs			
1000	5	Bromley, Kent	5 0 0	7 0 0	
		Bromsgrove			
100	10	Bromyard (Lim.)	10 0 0		
		Broughton			
120	10	Bruton	10 0 0	4 0 0	8 to 9
		Brynmawr			
100	25	Buckingham	25 0 0	6 0 0	26 to 27
		Buntingford (Lim.)			
500	1	Burley-in-Wharfdale (Limited)	1 0 0	5 0 0	1 1 0
		Burnham, Somers.			
1600	5	*Burslem & Tunstll.*	5 0 0	10 0 0	9 0 0
2240	5	Do., new shares	5 0 0	7 10 0	7 0 0
440	2½	Burton, Westmrld. (Limited)	2 10 0		
1200	10	*Bury St. Edmnd's*	10 0 0	10 0 0	17 10 0
1800	10	Do., new shares	1 10 0	10 0 0	
303	10	Buxton (Limited)	10 0 0	7 10 0	14 0 0
150	10	Caistor	10 0 0	7 0 0	12 0 0
187	5	Callington	5 0 0		5 0 0
215	10	Calne, Wilts	10 0 0	6 0 0	10 0 0
		Camborne			
600	50	*Cambridge*	50 0 0	10 0 0	90 0 0
160	12½	Do., new shares	12 10 0	10 0 0	22 10 0
640	8	Do., do.	4 0 0	10 0 0	6 0 0
240	50	*Canterbury Gas & Water*	50 0 0		56 0 0
240	25	Do., new shares	25 0 0	£6	28 0 0
240	12½	Do., do.	12 10 0		14 0 0
240	6	Do., do.	6 5 0		7 0 0
800	25	*Cardiff*, A shares	25 0 0	10 0 0	42 0 0
800	25	Do., B shares	25 0 0	8 0 0	38 0 0
160	25	Carmarthen	25 0 0	5 0 0	30 0 0
		Carnarvon			
		Carshalton			
200	6	Castlecary	6 0 0		5 0 0
200	10	Castle Donnington	10 0 0	6 0 0	12 14 0
249	5	Castleford	5 0 0	5 0 0	5 0 0
400	5	Castletwn, I. of M.	5 0 0	5 0 0	5¼ to 5¾
620	2	Cawood (Limited)	2 0 0	4 0 0	
		Chatteris			
300	10	Cheadle	10 0 0	5 0 0	10 0 0
200	50	Chelmsford	50 0 0	8 0 0	70 0 0
200	25	Do., new shares	25 0 0	8 0 0	35 0 0
2500	16	*Cheltenham*, A sh.	16 0 0	8 0 0	
2500	8	Do., B shares	8 0 0	7 0 0	
		Do., new shares		7 0 0	
500	10	*Chepstow*, A sh.			
200	10	Do., B shares			
		Chertsey (*see* Co. & General, Lond)			
		Chertsey Consmrs. (Lim.) £3000			
230	10	Chesham	10 0 0	5 0 0	10 10 0
30000	Sk.	*Chester United*	Stock.	8 0 0	
24650	,,	Do., preference	,,	7 0 0	140 0 0
535	10	Do., new shares	2 10 0	7 0 0	3 10 0
250	5	Chester-le-Street	5 0 0	6 0 0	5 0 0
19200	Sk.	*Chesterfield G. & W*		5 0 0	
400	50	Do., new shares	50 0 0	5 0 0	52 0 0
		Chestertn. (L.) £2000			
240	25	Chichester	25 0 0	6 0 0	31 10 0
		Chippenham			
320	10	Chipping Norton (Limited)	10 0 0	5 0 0	
100	10	Chipping Ongar	10 0 0	2 10 0	5 0 0
838	20	Chorley	20 0 0	7 0 0	27 0 0
		Chowbent, Lancashire			
		Christchurch			
200	5	Church Stretton (Limited)	5 0 0		
680	10	Cirencester	10 0 0	5 0 0	11 0 0
357	10	Cleckheaton, A sh.	10 0 0	5 0 0	
357	10	Do., B shares	10 0 0	5 0 0	
350	10	Clevedon	10 0 0	4 10 0	10 0 0
		Clitheroe			
1132	5	Cockermouth	5 0 0	5 0 0	5 5 0
300	5	Coggeshall	5 0 0		4½ to 5
900	20	Colchester	20 0 0	7 0 0	24 0 0
		Coleford, Glocester			
		Coleshill (L.) £2000			
160	10	Collingham (Lim.)	10 0 0	5 0 0	10 0 0
		Collumpton			
150	20	Colne, Lancashire	20 0 0		36 0 0
150	10	Do., ½ shares	10 0 0		18 0 0
150	5	Do., ¼ shares	5 0 0	£10	9 0 0
150	5	Do., A shares	5 0 0		9 0 0
150	5	Do., B shares	5 0 0		9 0 0
150	5	Do., C shares	2 0 0		5 0 0
200	25	*Congleton*	25 0 0	5 0 0	31 0 0
320	5	Conway (Limited)	5 0 0		5 0 0
		Corsham			
1600	25	*Coventry*	25 0 0	8 0 0	35 0 0
	25	Do., new shares	25 0 0	7 10 0	
200	10	Cowbridge	10 0 0	3 0 0	5 0 0
500	10	Cowes	10 0 0	5 0 0	
		Cradley Heath, nr. Dudley			
		Cranbrook. £1900		5 0 0	
		Crayford & Bexley			
420		Crediton	5 0 0	5 0 0	6 0 0
225	10	Crewkerne	10 0 0	3 0 0	10 0 0
		Cricklade (L.) £1000			
200	10	Croft & Hurworth-upon-Tees (Lim)	9 0 0		
1200	1	Crook (Limited)	1 0 0	10 0 0	1 5 0
251	5	Crowland	5 0 0	7 0 0	
181	10	Crowle, Lincoln	10 0 0	10 0 0	
4000	5	*Croydon Commrcl.*	5 0 0	10 0 0	10 0 0
		Cuckfield			
250	20	Dartford	20 0 0	7 0 0	27 0 0
700	5	Dartmouth (Lim.)	5 0 0	5 0 0	5 0 0
125	20	Daventry	20 0 0	5 0 0	24 8 0
165	10	Dawley	10 0 0	5 0 0	10 0 0
346	5	Dawlish	5 0 0	8 0 0	7 10 0
800	10	Deal & Walmer	10 0 0	5 0 0	10 0 0
1200	1	Deddington	1 0 0		
		Dedham (L.) £1000			
		Delph, Yorkshire			
500	6	Denbigh	6 0 0	5 0 0	6 0 0
1450	25	*Derby*	25 0 0	10 0 0	51 18 0
		Dereham			
7000	5	*Devonport*	5 0 0	8 0 0	8 12 6
3000	5	Do., preference	2 0 0	4 0 0	4 5 0
4000	5	*Dewsbury & Batley*	5 0 0	7 10 0	7 10 0
2000	5	Do., new shares	3 0 0	7 10 0	
		Dolgelly			
160	10	Donnington	10 0 0	5 0 0	10 0 0
340	25	Dorchester	25 0 0	5 0 0	30 0 0
120	25	Dorking	24 0 0	5 0 0	25 0 0
		Dorrington, Line.			
192	25	Douglas, I. of Man	25 0 0	8 0 0	30 0 0
21945	Sk.	*Dover*	100 0 0	6 0 0	108 0 0
400	10	Do., new shares	5 0 0	6 0 0	6 0 0
500	10	Dowlais (Limited)	10 0 0	8 0 0	12 0 0
25	60	Downham Market	60 0 0	7 10 0	
		Driffield			
		Droitwich			
500	20	*Droylsden*	10 0 0		
600	30	*Dudley*	30 0 0	6 6 0	41 0 0
1500	20	*Dukinfield*	11 0 0	10 0 0	22 10 0
200	10	Dunmow	10 0 0	5 0 0	10 0 0
		Dunstable			
900	10	Durham	10 0 0	10 0 0	£26
900	10	Do., new shares	5 10 0	10 0 0	
250	10	Dursley, Glocestr.	9 0 0	6 0 0	9 5 0
150	5	Easingwold	5 0 0	5 0 0	
400	10	Eastbourne	10 0 0	5 0 0	11 0 0
90	20	East Dereham	20 0 0	5 0 0	21 0 0
356	5	East Grinstead	5 0 0	6 0 0	5 0 0
1200	5	East Retford	5 0 0	10 0 0	7 10 0
		Eckington & Mosboro' (L.) £2500			
		Egremont, Cumb.			
703	6⅔	*Elland*	6 10 0	8 0 0	10 0 0
800	5	Elsecar (Limited)	5 0 0	5 0 0	5 12 0
		Eltham			
200	10	Emsworth			
400	5	Enfield	5 0 0	5 0 0	5 0 0
300	19	Epsom & Ewell	19 0 0		
		Erith			
325	10	Eton—Cannel Gas (Limited)	10 0 0	5 0 0	10 0 0
700	10	Evesham (Lim.)	10 0 0	6 0 0	9½ to 10
1600	25	*Exeter*	25 0 0	8 0 0	40 to 42
250	10	Exmouth	10 0 0	5 0 0	10 0 0
58	25	Eye	25 0 0	5 0 0	25 0 0
170	10	Fairford	10 0 0	3 0 0	
		Fakenham (L.) £3500			
100	38	Fareham	38 0 0	5 0 0	
120	25	Farnham	25 0 0	10 0 0	42 0 0
		Farnworth & Kearsley			
		Farringdon			
140	50	Faversham	50 0 0	6 0 0	
		Fazeley (L.) £3000			
120	10	Fenny Stratford (Limited)	10 0 0	5 0 0	11 0 0
	5	Filey	5 0 0	5 0 0	5 0 0
300	10	Folkestone	10 0 0	10 0 0	15 0 0
240	10	Do., new shares	8 0 0	10 0 0	13 0 0
280	5	Framlingham	5 0 0	5 0 0	5 10 0
1155	1	Frodsham (Lim.)	1 0 0	2 10 0	1 0 0
160	25	Frome	25 0 0	7 10 0	
160	25	Do., new shares	20 0 0	7 10 0	
12000	Sk.	*Gainsborough*	All	6 0 0	110 to 115
400	20	Do., new shares	6 0 0	6 0 0	
170	10	Gillingham (Lim.) Dorset	10 0 0	3 0 0	
103	25	Glastonbury	25 0 0	4 0 0	15 0 0
600	10	*Glossop*	10 0 0	9 0 0	16 0 0
600	5	Do.	5 0 0	9 0 0	8 0 0
1800	10	Do., new shares	6 10 0	7 10 0	8 10 0
1000	25	*Gloucester*, A sh.	25 0 0	10 0 0	41 0 0
856	25	Do., B shares	18 15 0	7 10 0	23 15 0
260	20	Godalming	20 0 0	5 0 0	20 0 0
300	5	Do., new shares	5 0 0	5 0 0	5 0 0
100	20	Do., do.	8 0 0		
100	5	Do., do.	2 0 0		
621	5	Gomersal	5 0 0	6 0 0	6 7 6
		Gorleston & Southdown			

No. of Shares issued.	Amount per Share.	Name of Company.	Amount paid up per Share.	Div. per Cent. per Annum.	Price per Share.
	£		£ s d	£ s d	£ s d
		Gosport			
450	20	Grantham	20 0 0	7 0 0	28 0 0
1000	20	Gravesend	20 0 0	5 0 0	21 0 0
		Grays Thurrock			
643	5	Gt. Berkhampstd.	5 0 0	6 0 0	5 10 0
1000	10	*Great Grimsby*	9 10 0	9 0 0	16 0 0
1000	6¼	Do., new shares	4 10 0	9 0 0	7 0 0
700	5	Great Harwood	5 0 0	4 5 0	
280	5	Do., new shares	1 0 0		
210	10	Great Marlow	10 0 0	5 0 0	10 0 0
		Great Torrington			
450	5	Great Wigston	5 0 0	6 0 0	
150	1	Do., new shares	1 0 0	6 0 0	
1300	10	Guernsey	9 0 0	8 15 0	18 0 0
352	25	*Guildford*, A sh.	25 0 0		
352	3	Do., B shares	3 0 0		
		Do., new shares			
		Guisborough			
240	5	Hadlow (Limited)	5 0 0		
140	10	Hailsham	10 0 0	6 0 0	10 0 0
40	50	Halesowen	50 0 0	6 0 0	
480	5	Halesworth	5 0 0	7 10 0	7 5 0
240	5	Haltwhistle (Lim.)	5 0 0	4 10 0	5 0 0
		Hampton			
1000	10	*Harrogate*	10 0 0	5 0 0	16 15 0
6800	5	*Hartlepool Gas & Water*	5 0 0	7 0 0	7 12 6
3322	5	Do., new shares	5 0 0	7 0 0	7 0 0
9878	5	Do., do.	1 10 0	7 0 0	
1000	1	Hartley Wintney, Hants.	1 0 0	2 10 0	21s. to 23s.
		Harwich			
662	6	*Haslingden*	6 0 0	10 0 0	10 0 0
343	6	Do., A shares	4 0 0	10 0 0	6 0 0
1254	25	*Hastings & St. Leonard's*	25 0 0	8 0 0	
180	10	Hatfield			
		Harlow			
500	5	Havant	5 0 0	3 0 0	5 0 0
120	10	Haverhill	10 0 0	5 0 0	10 0 0
244	5	Haworth	5 0 0		5 5 0
		Hay, Brecon			
		Haydon Bridge			
4965	1	Hebden Bridge	1 0 0		
170	10	Heckington (Lim.)	10 0 0		10 0 0
120	10	Hedon (Limited)	10 0 0	3 0 0	
145	12	Helston	12 0 0	9 0 0	
250	10	Hemel Hempstead	10 0 0	4 0 0	7 0 0
300	10	Henley (Limited)	10 0 0		
		Hereford. £10,000		4 10 0	
300	10	Herne Bay	10 0 0	6 0 0	11 0 0
		Hertford			
		Hessle (L.) £1500			
470	10	Hexham	10 0 0	8 0 0	14 0 0
400	25	*Heywood*	25 0 0	7 10 0	40 0 0
400	25	Do., new shares	25 0 0	7 10 0	37 10 0
160	10	Higham Ferrers	10 0 0	7 0 0	12 0 0
		Highworth, Wilts			
520	5	High Wycombe	5 0 0	6 0 0	6 16 0
300	10	Hinckley	10 0 0	7 10 0	10 0 0
600	5	Hindley, Lancash	3 0 0		3 0 0
200	20	Hitchin	20 0 0	8 0 0	
200	5	Do., new shares	5 0 0	8 0 0	
		Hoddesden			
555	20	*Holmfirth*	19 0 0	5 0 0	19 0 0
960	5	Holyhead	5 0 0	6 0 0	6 2 6
		Holywell (*see* B. P)			
98	25	Honiton	25 0 0	3 12 0	20 0 0
1250	1	Honley (Limited)	1 0 0	5 0 0	1 0 0
6	500	Horncastle	£500		
		Hornsey (Lim.)			
1200	2½	Horsforth	2 10 0		2 10 0
193	20	Horsham	20 0 0	10 0 0	26 0 0
	10	Houghton-le-Spg.	10 0 0	8 0 0	
		Howden			
1700	20	*Huddersfield*	20 0 0	10 0 0	37 5 0
250	20	Do., new shares	15 0 0	10 0 0	
		Hull			
		Hull-Sculcoates (*see* Brit. Prov.)			
210	10	Hungerford	10 0 0	5 0 0	10 0 0
860	10	Huntingdon & Godmanchester	10 0 0	4 0 0	10 0 0
		Hurstperpoint (Lim.) £1800			
600	10	Huyton & Roby	10 0 0	7 0 0	11 0 0
2500	10	*Hyde*	9 0 0	5 10 0	10 15 0
400	10	Hythe & Sandgate (Limited)	10 0 0	6 0 0	10 15 0
		Idle & Eccleshill (*see* Airdale)			
		Ilford			
198	12	Ilfracombe	2 0 0	4 0 0	8 to 9
560	6¼	Ilkestone	6 5 0	11 4 0	8 0 0
		Ilkley			
		Ilminster			
250	5	Ingatestone (Lim.)	5 0 0	1 10 0	
2800	10	*Ipswich*	10 0 0	8 0 0	15 to 16
		Ironbridge			
180	10	Irthlingborough	10 0 0	5 0 0	10 0 0
800	30	*Isle of Thanet* (Margate & Ramsgate.)	30 0 0	10 0 0	
		Jersey, St. Helier's			
363	5	Kelvedon (Lim.)	5 0 0		
1842	9	*Kendal Union Gas & Water*	9 0 0	7 0 0	12 10 0
380	20	Do., preference	20 0 0	7 10 0	35 0 0
290	10	Kenilworth (Lim.)	10 0 0	4 0 0	10 0 0
400	5	Keswick	5 0 0	5 0 0	4 0 0
200	25	Kettering	25 0 0	6 0	30 0 0
		Keynsham			
		Kibworth			
		Kidderminster, £10,000		5 0 0	
800	5	Kidsgrove	5 0 0	12 0 0	7 10 0
150	10	Kimbolton	10 0 0	7 0 0	12 0 0
140	7	Kingsbridge	7 0 0		10 to 11
270	5	King's Cliffe	5 0 0	5 10 0	5 0 0
		Kingstn-on-Tham. Kington, Hereford			

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	£		£ s d	£ s d	£ s d
400	5	Kinver, Staffordsh.	5 0 0		5 0 0
		Kirby Lonsdale			
		Kirkburton			
330	5	Kirkham, Lanc.	5 0 0	4 0 0	5 0 0
330	2½	Do., new shares	2 10 0	4 0 0	2 10 0
200	10	Kirton-in-Lindsey (Limited)	10 0 0	5 0 0	10 10 0
200	5	Knighton	5 0 0		
1000	10	*Knottingley*			
470	31½	*Lancaster*	31 10 0	7 2 10	45 to 46
470	6gs.	Do.	6 6 0	7 2 10	9 to 9¼
564	15¾	Do.	15 15 0	5 0 0	21 to 22
50	25	Langport	25 0 0	4 0 0	15 0 0
		Launceston			
		Lea Bridge (*see* Co. & Gen.)			
1000	20	*Leamington Priors*	20 0 0	8 0 0	26 0 0
250	20	Do., new shares	20 0 0	5 0 0	20 0 0
213	10	Leatherhead	10 0 0	5 0 0	10 0 0
		Ledbury			
60300 *l*	Sk.	*Leeds Old Comp*— Old shares	£100	10 0 0	174 to 176
50000 *l*	,,	New do.	£100	6 0 0	113 to 114
3970	10	Do. do.	7 0 0	6 0 0	8¼ to 8¾
45000 *l*		*Leeds New Comp*— Old stock	£100	10 0 0	185 0 0
35000 *l*		New do.	£100	6 0 0	116 0 0
8000	6¼	Do., shares	6 5 0	6 5 0	7 5 0
3900	10	*Leicester*	10 0 0	8 0 0	16¼ to 16¾
		Leigh			
426¼	21	Leighton Buzzard	21 0 0	7 0 0	25 0 0
400	10	Leominster	10 0 0	5 0 0	9 0 0
330	25	Lewes, A shares	25 0 0	8 0 0	31 5 0
644	5	Do., B shares	5 0 0	8 0 0	6 5 0
245	5	Leyburn, Yorksh.	5 0 0		6 0 0
		Leyland, Lancash.			
256	20	Lichfield	20 0 0	10 0 0	40 0 0
320	25	*Lincoln*	25 0 0	10 0 0	70 0 0
				& Bns. of 12/6	
300	5	Lindfield (Limited)	5 0 0		5 0 0
240	5	Liskeard	5 0 0	8 0 0	6 0 0
240	5	Littlehampton	5 0 0	7 10 0	5 0 0
100		*Liverpool United*	£100	10 0 0	205 0 0
25		Do., ¼ share	25 0 0	10 0 0	50 0 0
259	5	Llandovery (Lim.)	1 10 0		
761	10	Llandudno Gas & Water	10 0 0	7 0 0	
		Llanelly £3000		5 0 0	
		Llanfyllin (Lim.) £2000			
		Llangollen			
250	10	Llanrwst (Limited)	9 15 0	5 0 0	9 15 0
		LONDON COMPANIES.			
5000	10	Anglo-Romano (*en commandite*)	10 0 0	8 0 0	10 to 12
5000	20	Bahia (Limited)	16 0 0		
5000	20	British Provincial	20 0 0	8 0 0	26¼ to 27½
8200	20	Do., new	20 0 0	7 0 0	26¼ to 27
		(Norwich, Hull-Sculcoates, Shelton Potteries, Trowbridge, & Holywell.)			
12000	50	*Chartered*	50 0 0	8 5 0	74 to 76
6000	50	Do.	20 0 0	8 5 0	35 to 37
10000	20	*City of London*, A shares	20 0 0	7 0 0	27 to 28
10000	10	Do., B shares	10 0 0	4 0 0	7½ to 7¾
10000	10	Do., new shares	8 0 0	7 0 0	10¼ to 11
11697	25	*Commercial*	25 0 0	10 0 0	40 to 42
5771	25	Do., new shares		10 0 0	
1891	5	County & General (Limited)	5 0 0	6 0 0	
2000	5	Do., preference	5 0 0	6 0 0	
		(Pater, Pembroke, Chertsey, Lea Bridge, Northfleet, Walton, & Ware.)			
5000	10	*Crystal Palace District*	10 0 0	7 0 0 & Bns.	13 to 14
5000	10	Do., preference	1 0 0	6 0 0	1 10 0
4000	50	*Equitable*	50 0 0	10 0 0	82 to 84
4000	25	Do., new shares	10 0 0	10 0 0	20 to 22
23406	10	European (Lim.)	10 0 0	10 0 0	13¼ to 14
		(Boulogne, Amiens, Rouen, Caen, Havre, & Nantes.)			
17260	10	*Great Central Gas Consumers*	10 0 0	6 0 0	12¼ to 13
13000	50	*Imperial*, old sh.	50 0 0	10 0 0	81 to 83
13000	50	Do., new shares	40 0 0	10 0 0	65 to 66
1300	100	Do., bonds	£100	10 0 0	200 to 205
28000	50	*Imperial Continental*	43 15 0	8 0 0	50 to 52
		(Amsterdam, Berlin, Ghent, Hanover, Lille, Rotterdam, Aix-la-Chapelle, Antwp., Bordeaux, Brussels, Cologne, Frankfort-on-M., Haarlem, Toulouse, & Vienna.)			
3000	40	*Independent*	40 0 0	5 0 0 & Bns.	60 to 63
4904	50	*London*	50 0 0	7 0 0	71 to 73
5519	25	Do., 1st pref.	25 0 0	6 0 0	29¼ to 30½
1921	50	Do., 2nd pref.	50 0 0	6 0 0	68 to 70
870	50	Do., 3rd pref.	50 0 0	6 0 0	68 to 70
20455 *l*		Do., 1st pref. sk		6 0 0	
13608 *l*		Do., 2nd pref. sk		6 0 0	
		London & Prvncl. Gas & Water (Lim.) £50,000			
50000	1	Oriental (Limitcd), Calcutta	1 0 0	4 10 0	1½ to 1⅝
50000	1	Do., new shares	0 15 0	4 10 0	⅝ to 1
9000	60	*Phœnix*	55 0 0	10 0 0	80 0 0

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	£		£ s d	£ s d	£ s d
5000	20	*Ratcliff*	18 0 0	6 17 6	20 to 21
4000	50	*Sth. Metropolitan*	42 0 0	10 0 0	63 to 65
12633	10	*Surrey Consumers*	10 0 0	8 0 0	14⅞ to 15½
2147	10	Do., new shares	2 0 0	8 0 0	2 5 0
9000	50	United General (Dublin & Limerick)	50 0 0	2 6 0	25½ to 26½
10000	10	*Victoria Docks*			
1500	10	*Wandsworth & Putney*	10 0 0		
1500	10	Do., new shares			
20000	10	Western (Limited) A shares	10 0 0	9 0 0	15⅞ to 16¼
10000	10	Do., B shares	3 0 0	9 0 0	5 to 6
2777	5	*West Ham*	5 0 0		
13223	5	Do., new shares. Wt. London Junc. (Lim.) £13,500			
		Long Buckby (L.)			
126	10	Long Sutton (Lim.)	10 0 0	7 10 0	11 to 12
2000	5	Longton (Lim.)	5 0 0	7 0 0	5 10 0
		Longwood, near Huddersfield			
250	5	Lostwithiel	5 0 0		6 0 0
250	1	Do., new shares	1 0 0		1 0 0
711	6	Loughborough	6 0 0	8 0 0	9 0 0
711	6	Do., new shares	4 0 0	8 0 0	6 0 0
240	25	*Louth*	25 0 0	10 0 0	29 0 0
2500	10	*Lowestoft G. & W.*			
611	5	Ludlow Union	5 0 0	5 0 0	5 5 0
250	5	Do., pref. shares	5 0 0	5 0 0	
640	10	*Luton*	10 0 0	7 10 0 & Bns	12 0 0
640	5	Do., preferential	5 0 0	4 0 0	5 0 0
640	5	Do., new shares	5 0 0	7 10 0 & Bns.	6 0 0
100	20	Lutterworth	20 0 0	6 5 0	25 0 0
		Lydney (L.) £3000			
63	20	Lyme Regis	20 0 0	4 0 0	20 0 0
120	25	Lymington	25 0 0	5 0 0	25 0 0
		Lymm			
300	10	Maidenhead	10 0 0	5 0 0	10 0 0
500	25	*Maidstone*, A sh.	25 0 0	10 0 0	45 0 0
500	25	Do., B shares	25 0 0	4 0 0	20 0 0
	25	Do., new shares	25 0 0	7 10 0	
204	23	Maldon	23 0 0	7 0 0	27 0 0
200	10	Malmesbury	10 0 0	2 10 0	5 15 0
		Malvern Link (Lim.) £5000			
		Manningtree			
		Mansfield £5000		10 0 0	
150	10	Mansfield Woodhouse	10 0 0		
		March			
		Margate (*see* Isle of Thanet)			
		Market Drayton			
132	25	Market Harboro'	25 0 0	7 0 0	35 0 0
		Market Weighton			
		Markyate St. (L.)			
		Marlborough			
150	10	Marsden (Lim.)	10 0 0	5 0 0	10 0 0
370	10	Maryport	10 0 0	6 0 0	12 0 0
500	5	Matlock Baths	5 0 0		
200	2	Measham (Lim.)	1 12 6	5 0 0	
220	10	Melbourne	10 0 0	6 0 0	12 0
		Melksham			
934	2	Meltham	2 0 0	4 10 0	
		Melton Mowbray			
50	10	Mere	10 0 0		
		Merthyr Tydvil			
120	10	Middleham	10 0 0	5 0 0	10 0 0
3000	10	*Middleton*		10 0 0	
		Middleton-in-Teesdale (L.) £1000			
400	5	Midhurst (Lim.)	5 0 0	2 10 0	5 0 0
		Midsmmr. Norton			
198	5	Mildenhall	5 0 0	5 0 0	
300	5	Milnthorpe (Lim.) £1500	4 10 0	3 6 8	
184	10	Milverton (Lim.)	10 0 0	5 0 0	10 0 0
2000	5	*Mirfield*	5 0 0	5 0 0	6 5 0
700	10	Mitcham	10 0 0	10 0 0	14 10 0
650	5	Mold Gas & Water	5 0 0	7 10 0	6½ to 6¾
700	10	Monmouth Gas & Water	10 0 0	5 0 0	10 0 0
250	5	Montgomery (L.)	5 0 0		
150	10	Morcton-in-Marsh	9 2 6	4 0 0	9 2 6
1000	5	Morley, nr. Leeds	5 0 0	6 0 0	6 15 0
220	16	Morpeth	16 0 0	5 0 0	17 10 0
		Mossley			
		Mottram			
		Nayland			
		Neath			
185	10	Needham Market	10 0 0	4 0 0	
		Nelson (L.) £5000			
		Netherthong (Lim.) £700			
		Newark £5000		10 0 0	
		Newburn			
250	20	Newbury	20 0 0	5 0 0	20 0 0
16000	8	Newcastle & Gateshead Union	8 0 0	7 0 0	13 to 13¼
		Newcastle-under-Lyme			
250	5	Newent	5 0 0		
		Newhaven, Sussex			
		New Malton			
600	5	Newmarket	5 0 0	4 0 0	4 0 0
366	2	Do., preference	2 0 0	6 0 0	2 0 0
		New Mill (L.) £7000			
200	20	*New Mills & Hayfield*	15 10 0	5 0 0	
70	20	Newnham (Lim.)	20 0 0		21 0 0
		Newport Pagnell			
360	35	*Newport, Monmouth*, A sh.	35 0 0	9 0 0	50 0 0
540	35	Do., B shares	35 0 0	7 10 0	42 10 0
		Newport, Salop			
250	5	New Romney (Ld.)	5 0 0	5 0 0	5 0 0
		Newton Abbott			

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	£		£ s d	£ s d	£ s d
198	10	Newtown, Montgomeryshire	10 0 0	6 0 0	10 0 0
		Northallerton			
777	20	*Northampton*, A shares.	20 0 0	10 0 0	£73
777	20	Do., B shares.	20 0 0	4 0 0	
777	20	Do., C shares.	10 0 0	7 10 0	
		North Bierley (Lim.) £20,000			
		Northfleet (*see* Co. & General)			
2914	5	N. Shields, Tynemouth	5 0 0	5 0 0	6 to 6¼
120	10½	North Walsham	10 10 0	5 0 0	10 15 0
371	15	Northwich	15 0 0	5 0 0	15 0 0
		Norwich (*see* Brit. Provincial)			
4000	50	*Nottingham*	50 0 0	5 0 0	
	50	Do., new shares.	50 0 0	10 0 0	
268	8	Nuneaton (Lim.)	8 0 0	5 0 0	7 10 0
125	8	Do., new shares.	8 0 0	5 0 0	7 10 0
		Oaken Gates, Salop			
240	5	Oakhampton (Lim.)	5 0 0		
200	10	Odiham	10 0 0	5 0 0	10 0 0
		Olney			
360	10	*Ormskirk*, old sh.	10 0 0	8 0 0	14 0 0
1080	10	Do., new shares.	4 10 0	8 0 0	6 4 6
2400	5	*Ossett & Horbury*.	5 0 0	5 0 0	5 10 0
		Oswestry			
		Otley, Yorkshire			
80	25	Oundle	25 0 0	7 0 0	25 0 0
600	15	*Over Darwen*, original.	15 0 0	5 0 0	19 0 0
600	15	Do., A shares.	15 0 0	5 0 0	19 0 0
1200	15	Do., B shares.	7 10 0	5 0 0	10 0 0
1694	1	Over & Wharton (Limited)	1 0 0		1 2 0
120	150	*Oxford*	£150	9 10 0	250 0 0
1527	5	Padiham	5 0 0	6 0 0	6 0 0
		Paington (Lim.)			
338	2½	Painswick	2 10 0		2 10 0
		Pangbourne (Lim.) £1500.			
		Pately Bridge, Yorkshire			
300	5	Peel, Isle of Man	5 0 0	7 0 0	6 to 7
		Pembroke (*see* Co. & General)			
500	20	*Peniston, Thurlstone, & Oxspring*			
250	20	Penrith	15 0 0	6 10 0	21 0 0
153	20	Penzance	20 0 0		15 0 0
320	5	Petersfield	5 0 0	5 0 0	
200	10	Petworth	10 0 0	9 17 6	15 0 0
		Pickering			
2500	10	*Plymouth & Stonehouse*	10 0 0	10 0 0	20 0 0
2500	10	Do., new shares.	10 0 0	7 10 0	15 0 0
160	10	Pocklington	10 0 0		5 0 0
		Ponder's End & Enfield Highway. (L)			
		Pontefract			
		Pontypridd		4 0 0	
400	10	Poole	10 0 0	10 0 0	15 0 0
344	2	Do., new shares.	2 0 0	10 0 0	3 0 0
		Port Madoc			
600	53	*Portsea Island*	53 0 0	6 0 0	66 to 69
600	50	Do., new shares.	50 0 0	6 0 0	62 to 65
120	10	Potton, Bedfordsh.	10 0 0	5 0 0	10 0 0
400	10	Prescott	10 0 0	5 0 0	
		Presteign			
60000	Sk.	*Preston*	All.	10 0 0	205 0 0
3000	20	Do., new shares.	16 0 0	10 0 0	35 10 0
1000	10	Provincial (Hull)	8 0 0		8 0 0
600	20	*Pudsey*	20 0 0	7 10 0	30 0 0
600	6⅔	Do., new shares.	4 13 4	7 10 0	4 13 4
93	20	Pwllheli	20 0 0	2 10 0	25 0 0
600	5	Quorndon & Mountsorrel	5 0	7 0 0	12 0 0
900	10	*Radcliff & Pilkington*, No. 1	10 0 0		
2100	10	Do., No. 2	6 0 0		
200	20	Ramsay, I. of Man	20 0 0	6 10 0	23 0 0
		Ramsey, Hunts			
		Ramsgate (*see* Isle of Thanet)			
		Rawmarsh			
1019	10	*Reading*	10 0 0	6 0 0	10 10 0
500	20	*Reading Union*	20 0 0	8 0 0	26 10 0
		Redbourn (Lim.) £1100.			
400	5	Redcar	5 0 0	4 0 0	5 0 0
		Redhill (L.) £4000			
		Redruth			
		Reigate			
1200	1	Repton (Limited)	1 0 0	5 0 0	1 1 0
2000	10	Richmond, Surrey (Limited)	10 0 0	7 0 0	15 0 0
400	5	Rickmansworth	5 0 0		5 0 0
180	10	Ringwood	10 0 0	5 0 0	10 0 0
180	33⅓	Ripon	33 10 0	4 10 0	
		Rochester & Chatham £20,000		6 0 0	
		Rochford			
		Romford			
200	25	Romsey			
	25	*Rotherham*, A sh.	25 0 0	10 0 0	36 0 0
200	12½	Do., B shares.	12 10 0	8 0 0	18 0 0
600	12½	Do., C shares.	8 0 0	8 0 0	11 0 0
600	20⅚	Do., D shares.	2 10 0	8 0 0	3 10 0
		Rothwell			
350	10	Royston	10 0 0	5 0 0	9 10 0
150	20	Rugby	20 0 0	10 0 0	
150	5	Do., ⅓ shares.	5 0 0	10 0 0	
150	6⅔	Do., ⅓ shares.	6 13 4	10 0 0	
150	10	Do., new shares.	10 0 0	10 0 0	
150	2½	Do., do.	2 10 0	10 0 0	
150	3¾	Do., do.	3 6 8	10 0 0	
430	10	Rugely	10 0 0	5 0 0	10 10 0
		Runcorn £11,000		7 10 0	
114	31½	Ruthin	31 5 0	6 16 0	40 0 0
500	10	Ryde	10 0 0	6 0 0	12 0 0
500	5	Rye	5 0 0	6 0 0	6 0 0
		Saddleworth			
225	22	Saffron Walden	22 0 0	4 0	16 to 18
1400	5	St. Alban's Gas & Water (Limited)	5 0 0	5 0 0	5 5 0
320	5	St. Asaph (Lim.)	5 0 0		
		St. Austell			
		St. Colomb			
3000	10	*St. Helen's*	10 0 0	10 0 0	19 0 0
		St. Ives, Cornwall			
180	10	St. Neot's	10 0 0	8 0 0	12 0 0
400	25	Salisbury	25 0 0	6 0 0	28 0 0
341	10	Sandbach	10 0 0	5 0 0	12 10 0
381	10	Sandwich	10 0 0	5 0 0	9 10 0
		Sandy, Beds			
		Sawbridgeworth			
100	10	Saxmundham	10 0 0	5 0 0	
2000	10	*Scarborough*	10 0 0	7 0 0	13 0 0
1000	10	Do.	6 0 0	7 0 0	12 2 6
240	5	Sedburgh	5 0 0		
300	16	Selby	16 0 0	5 0 0	
140	5	Settle (Limited)	3 10 0	5 0 0	
290	10	Sevenoaks	10 0 0	4 0 0	10 0 0
300	10	Shaftesbury (Lim.)	10 0 0	5 0 0	8½ to 9
565	5	Sheepshed (Lim.)	5 0 0	6 0 0	6 0 0
135000	Sk.	*Sheffield Und*, Ash.	All.	10 0 0	188 0 0
39264	Sk.	Do., B shares.	All.	8 0 0	178 0 0
4800	16g.	Do., D shares.	11 0 0	8 0 0	8 7 6
1600	6gs.	Do., E shares.	4 2 6	8 0 0	3 2 6
2530	30	Do., C shares.	1 10 0	8 0 0	12 10 0
600	5	Shefford (Limited)	4 0 0		
		Shelton, Potteries (*see* Brit. Prov.)			
		Sheppy Cons. (L.), Sheerness	5 0 0	7 0 0	
350	10	Shepton Mallet	10 0 0	7 10 0	10 0 0
800	5	Sherborne	5 0 0	7 10 0	5 0 0
		Shiffnal, Salop			
1000	5	*Shipley*	5 0 0	6 0 0	7 10 0
150	10	Shipston-on-Stour	10 0 0	4 0 0	
		Shirley & Freemantle, Hants			
240	25	Shotley Br. (Lim.)	25 0 0	7 0 0	30 0 0
240	10	Do., new shares.	10 0 0	7 0 0	12 0 0
1000	10	*Shrewsbury*, A sh.	10 0 0		
1000	10	Do., B shares.	10 0 0		
530	10	Do., new shares.	10 0 0		
		Sible Hedingham			
400	15	Skipton	15 0 0	5 0 0	18 0 0
400	2½	Do., new shares.	2 10 0	5 0 0	3 0 0
250	20	Sleaford	20 0 0	5 0 0	20 0 0
250	10	Slough	10 0 0		
340	5	Snaith	5 0 0		4 0 0
		Soham			
150	10	Somerton	10 0 0		
354	5	Southam	5 0 0		
1000	50	*Southampton*	50 0 0	8 0 0	
		Southborough			
		Southend, Essex			
220	10	South Molton	10 0 0	5 10 0	7 10 0
2000	10	*South Shields*	10 0 0	7 0 0	10 11 6
248	10	Southwell (Lim.)	10 0 0	5 0 0	11 to 11¼
300	5	Southwold	5 0 0	5 0 0	5 0 0
1470	1	Spennymoor (Lim.)	1 0 0		
400	5	Spilsby	5 0 0		
		Spittal, Brk-on-Td.			
2000	6⅔	*Stafford*	6 13 4	7 0 0	10 0 0
2000	6⅔	Do., new shares.	4 0 0	7 0 0	5 0 0
178	5	Staindrop	5 0 0	6 0 0	5 0 0
248	25	Staines & Egham	25 0 0	6 0 0	26 to 27
		Staley Br, £15,000		10 0 0	
225	50	*Stamford & St. Martin's*	50 0 0	8 0 0	45 to 50
150	10	Staveley (Limited)	10 0 0	5 0 0	11 10 0
300	5	Stevenage	5 0 0	5 0 0	5 0 0
2000	10	*Stoke Fenton & Longton*	10 0 0	7 0 0	12 0 0
500	10	Do., new shares.	2 0 0	7 0 0	
400	5	Stone, Stafford	5 0 0	5 0 0	6 0 0
220	10	Stoney Stratford	10 0 0	4 10 0	9 0 0
		Storrington (Lim.) £1000.			
		Stourbridge, £5000			
		Stow-on-the-Wold			
150	20	*Stratford-on-Avon*	20 0 0	9 0 0	37 10 0
150	5	Do., new shares.	5 0 0	9 0 0	9 7 6
375	8	Do., preference	8 0 0	5 10 0	8 10 0
750	5	Stretford	5 0 0	9 0 0	5 0 0
		Stroud			
261	20	Sudbury	20 0 0	5 0 0	20 0 0
18120	5	*Sunderland*	5 0 0	8 0 0	8 5 0
3000	5	Do., new shares.	5 0 0	8 0 0	8 5 0
200	10	Sutton Coldfield (L)	10 0 0		10 0 0
350	10	Sutton-in-Ashfield	10 0 0	7 10 0	12 10 0
		Sutton Southcoates & Drypool, Hull	20 0 0		23 to 24
		Sutton, Surrey			
169	10	Swaffham	10 0 0	5 0 0	7 0 0
240	25	*Swansea*	25 0 0	10 0 0	45 to 50
880	25	Do., new shares.	25 0 0	7 10 0	36 0 0
		Swindon			
200	10	Swineshead (Lim.)	10 0 0	5 0 0	10 5 0
1000	5	Swinton & Mexboro'	5 0 0	7 0 0	7 0 0
180	10	Syston	10 0 0		10 0 0
276	5	Tadcaster	5 0 0	5 0 0	3 0 0
		Tamworth			
		Tattershall & Coningsby (Lim.)			
2800	5	*Taunton*	5 0 0	6 0 0	6 0 0
2800	1½	Do., new shares.	1 10 0	6 0 0	
		Tavistock			
200	5	Tenbury Union	5 0 0	5 0 0	5½ to 6
150	10	Tenterden	10 0 0	4 0 0	8 0 0
200	10	Tetbury, Gloster	9 0 0	5 0 0	
		Tewkesbury			
200	10	Thame	10 0 0	5 0 0	10 0 0
250	10	Thetford	10 0 0	6 0 0	10 to 11
150	10	Thornbury (Lim.)	10 0 0	4 0 0	
80	1	Do., new shares.	1 0 0	4 0 0	
356	5	Thorne	5 0 0		4 0 0
160	10	Thrapston (Lim.)	10 0 0	5 0 0	10 0 0
		Tideswell (L.) £2000			
1885	5	Todmorden (Lim.)	5 0 0	7 10 0	7 10 0
600	2½	Topsham (Lim.)	2 10 0	5 0 0	
		Torpoint (Lim.)			
		Torquay			
		Torrington, Devon			
		Totnes			
		Totnes Consumers			
5000	5	*Tottnhm & Edmtn.*	5 0 0	8 0 0	6 0 0
150	10	Towcester	10 0 0	5 0 0	10 0 0
		Town-Malling			
275	10	Tring	10 0 0	5 0 0	10 0 0
		Trowbridge (*see* Brit. Prov.)			
320	25	Truro	25 0 0	8 0 0	
		Tunbridge			
		Tunbridge Wells			
100	10	Tuxford	10 0 0	5 0 0	12 0 0
600	5	Tyldesley (Lim.)	5 0 0	7 10 0	7 0 0
		Ulverston			
		Uppingham			
240	5	Upton-on-Severn	5 0 0	5 0 0	5 0 0
310	5	Usk (Limited)	5 0 0	7 0 0	6 12 6
250	10	Uttoxeter	10 0 0	5 0 0	11 to 12¼
		Uxbridge			
		Ventnor			
160	10	Wainfleet (Lim.)	10 0 0		8 0 0
1000	25	*Wakefield*	25 0 0	10 0 0	44 0 0
3660	5	Do.,	5 0 0	10 0 0	8 16 0
1732	5	Do., new shares.	5 0 0	7 10 0	6 15 0
		Walker & St. Anthony (L.) £2000			
300	10	Wallingford	10 0 0	5 0 0	8 0 0
		Walton-on-Tham. (*see* Co. & Gen.)			
200	10	Wantage	9 0 0	5 0 0	10 10 0
		Ware (*see* C. & G.)			
100	10	Warcham	10 0 0	3 10 0	8 0 0
2000	1	Warkwth & Amble	1 0 0	3 10 0	
200	25	Warminster	25 0 0	6 0 0	28 0 0
900	20	*Warrington*	20 0 0	10 0 0	39 0 0
900	20	Do., new shares.	13 0 0	10 0 0	24 0 0
		Warth			
		Warwick. £15,000		6 0 0	
		Watford			
400	11½	Weedon (Limited)	11 10 0	7 10 0	17 5 0
400	3	Do., new shares.	1 10 0	8 10 0	2 5 0
111	25	Welchpool, Montg.	25 0 0	5 0 0	25 0 0
		Wellingborough			
450	10	Wellington, Salop.	10 0 0	7 10 0	12 10 0
		Wellington, Som.			
160	25	*Wells*, Somerset.	25 0 0	10 0 0	
		Wem (Lim.) £2000			
160	10	Westbury	10 0 0		
		West Cowes			
225	10	Westerham (Lim.)	10 0 0	5 0 0	11 0 0
454	5	W. Mallingd. & W.	5 0 0	3 0 0	4 10 0
400	20	*Weston-sup-Mare*	20 0 0	6 10 0	
200	5	Wetherby	5 0 0		1 10 0
2000	10	*Weymouth*			
		Whaley Bridge (Lim.) £2000.			
2300	1	Whitchurch, Hants	0 10 0	2 10 0	
400	25	Whitehaven	25 0 0	2 0 0	14½ to 15
		Whitehaven New			
		Whitstable			
250	10	Whittlesea	10 0 0	5 0 0	11 0 0
300	10	Whitwick & Coalvle	10 0 0		10 0 0
1200	5	*Whitworth Vale*	5 0 0	6 0 0	6 14 0
1200	5	Do., new shares.	3 15 0	6 0 0	4 17 0
		Widnes Gs. & Wtr.			
1250	10	*Wigan*	10 0 0	10 0 0	20 0 0
1250	10	Do., preference.	10 0 0	5 0 0	10 0 0
2500	10	Do., new shares.	5 0 0	7 10 0	8 15 0
400	5	Wigston	5 0 0	6 0 0	5 0 0
		Wigton, Cumberd.			
1020	5	*Willenhall*, A sh.	5 0 0		
1020	54s.	Do., B shares.	2 14 0	5 0 0	
		Do., new shares.			
		Wilton			
600	10	Wimbledon	8 0 0		8 0 0
240	10	Wimborne Minster	10 0 0		
130	10	Wincanton	10 0 0	7 0 0	
		Wincheombe £1500			
380	50	Winchester	50 0 0	5 0 0	50 0 0
1100	20	Windsor (Limited)	20 0 0	6 5 0	23 0 0
141	10	Winslow	10 0 0	6 0 0	10 0 0
120	10	Winterton (Lim.)	10 0 0	5 0 0	
120	5	Do., new shares.	5 0 0	5 0 0	
200	10	Wirksworth	10 0 0	5 0 0	10 0 0
		Wisbeach			
		Witham			
		Witney			
400	5	Wiveliscombe (L.)	5 0 0	6 0 0	5 5 0
		Wivenhoe (L) £2000			
200	10	Woburn	10 0 0	5 0 0	11 0 0
210	10	Wokingham	10 0 0	5 0 0	
4448	10	*Wolverhampton*	10 0 0	10 0 0	20 0 0
4448	10	Do., new shares.	6 0 0	10 0 0	13 10 0
550	10	Woodbridge (Lim.)	10 0 0	5 0 0	
660	2½	Woodstock	2 10 0	5 0 0	
		Woodhouses			
200	7	Wooler	7 0 0		
		Woolwich Consrs.			
		Woolwh. Equitable			
2400	10	*Worcester*	10 0 0	7 0 0	14 7 6
600	10	*Worksop*	10 0 0	5 0 0	
600	5	Do., new shares.	5 0 0	5 0 0	
		Worthing			
		Worsboroughdale & Worsboro' (Lim.) £2500.			
270	12	Wotton-un.-Edge.	12 0 0	4 0 0	7 0 0
600	5	Wrexham, A sh.	5 0 0	7 10 0	5 0 0
600	5	Do., B shares.	5 0 0	5 0 0	5 0 0
600	5	Do., C shares.	3 10 0	5 0 0	3 10 0
		Wye, Kent			
		Wylam			
400	5	Wymondham	5 0 0	6 10 0	5 0 0

No. of Shares issued.	Amount per Share.	Name of Company.	Amount paid up per Share.	Div. per Cent. per Annum.	Price per Share.
	£		£ s d	£ s d	£ s d
		Yarmouth, I. of W.			
795	20	Yarmouth, Norfk.	20 0 0	5 0 0	18 to 20
1675	4	Yeadon & Guiseley, near Leeds.	4 0 0	7 10 0	4 10 0
1675	2	Do., new shares.	0 5 0		
140	30	Yeovil	30 0 0	6 0 0	30 0 0
140	10	Do., new shares.	10 0 0	6 0 0	10 0 0
12000	5	*York United*	5 0 0	10 0 0	10 2 6
3000	5	Do., new shares.	2 0 0	10 0 0	5 5 0
		SCOTLAND.			
26000	2½	Aberdeen	2 10 0	10 0 0	5 1 0
		Abernethy			
		Aberlour(L.) £650.			
500	10	Airdrie	10 0 0	9 0 0	14 10 0
		Alloa			
		Alva, nr. Stirling			
		Alyth			
600	5	Annan	5 0 0	5 0 0	5 0 0
1600	1	Anstruther & Cellardyke	1 0 0	8 0 0	1 6 0
825	20	Arbroath	20 0 0	7 10 0	30 0 0
100	20	Ardrossan	20 0 0	5 0 0	20 0 0
658	1	Auchinleck	1 0 0		
381	5	Auchterarder	5 0 0	7 10 0	7 10 0
750	2	Auchtermuchty	2 0 0	6 0 0	2 10 0
2932	5	Ayr	5 0 0	6 0 0	5 12 0
4250	2	Ayr & Newton Cons.	2 0 0	6 0 0	2 0 0
300	10	Banff	10 0 0	6 0 0	11 0 0
2158	1	Barrhead	1 0 0	7 10 0	1 0 0
200	5	Bathgate	5 0 0	5 0 0	5 0 0
		Beith			
976	1	Bervie	1 0 0	5 0 0	
		Biggar			
739	5	Blairgowrie	5 0 0	8 0 0	7 0 0
400	6	Borrowstowness	6 0 0	5 0 0	6 0 0
540	5	Brechin	5 0 0	10 0 0	11 5 0
		Bridge of Allan			
4175	2	Broughty Ferry	2 0 0	4 0 0	2 0 0
		Campbelton			
250	4	Carluke, Lanark	4 0 0	7 10 0	4 0 0
178	5	Castle Douglas	5 0 0	5 0 0	5 0 0
1668	3	Coatbridge	3 0 0	10 0 0	4 5 0
200	5	Coldstream	5 0 0	6 0 0	5 0 0
		Collinsburgh			
1000	1	Comrie	1 14 8	4 10 0	1 14 8
		Corstorphine			
1200	1	Crail, Fife	1 0 0	5 0 0	1 0 0
2744	1	Crieff	1 0 0	10 0 0	1 15 0
600	1	Cullen	1 0 0	5 0 0	0 15 0
280	2½	Cumbernauld	2 10 0	5 0 0	2 10 0
200	5	Cumnock	5 0 0	6 0 0	6 0 0
600	5	Cupar Angus	5 0 0	7 0 0	6 10 0
250	10	Cupar Fife	10 0 0	10 0 0	18 10 0
300	10	Dalkeith	10 0 0	10 0 0	20 0 0
		Deanston			
750	2	Denny	2 0 0	6 5 0	2 5 0
		Denny Consumers			
	5	Dornoch			
500	1	Douglas	1 0 0	6 0 0	1 2 0
		Dufftown			
		Dumbarton			
400	20	Dumfries	14 0 0	7 2 10	14 10 0
391	5	Dunbar	5 0 0	6 0 0	5 10 0
		Dunblane			
1250	23⅓	*Dundee*	23 15 0	8 15 9	54 0 0
8000	5	*Dundee, New*	5 0 0	5 0 0	5 15 0
860	10	Dunfermline	10 0 0	7 10 0	16 10 0
		Dunkeld			
1750	2	Dunoon	2 0 0	6 0 0	2 3 0
		Dunse			
250	5	Dysart	5 0 0	7 10 0	6 10 0
2327	1	East Wemyss	1 0 0	6 0 0	1 2 0
750	1	Ecclefechan	1 0 0		
6000	25	*Edinburgh*	25 0 0	10 0 0	48 15 0
6400	25	*Edinburgh & Leith*	25 0 0	10 0 0	53 0 0
621	12	Elgin	12 0 0	6 0 0	13 0 0
1300	1	Elie & Earlsferry	1 0 0	7 5 0	1 3 0
		Ellon			
		Errol			
		Eyemouth			
	14	Falkirk	14 0 0	7 0 0	14 0 0
		Falkirk, New			
632	2	Falkland	2 0 0	5 0 0	2 0 0
		Fettercairn			
2000	1	Ferry Port on Craig	1 0 0	6 5 0	1 3 0
581	1	Fochabers	1 0 0	5 0 0	1 2 0
1440	5	Forfar	5 0 0	7 10 0	7 12 6
360	5	Do., new shares.	2 10 0	7 10 0	6 10 0
		Fort William			
2000	1	Fraserburgh	0 16 0	5 0 0	0 18 0
500	5	Galashiels	5 0 0	10 0 0	9 10 0
		Gatehouse, n. Fleet			
900	2½	Girvan	2 10 0	6 0 0	2 10 0
5200	25	*Glasgow*	25 0 0	10 0 0	44 10 0
3200	6½	Do., new shares.	6 5 0	10 0 0	12 1 3
15000	10	*Glasg. City & Sub.*	10 0 0	10 0 0	16 10 0
		Grahamston			
190	10	Grangemouth	10 0 0	5 0 0	10 0 0
400	8½	Haddington	8 5 0	7 10 0	11 10 0
		Hamilton			
	5	*Hamilton, New*	5 0 0	4 10 0	6 0 0
410	5	Hawick	5 0 0	7 10 0	7 10 0
300	5	Helensburgh	5 0 0	7 10 0	7 10 0
2000	2	Holywood (Lim.)	2 0 0	7 10 0	3 0 0
1312	1	Huntly	1 0 0	7 10 0	1 5 0
250	5	Inverary	5 0 0	10 0 0	6 12 6
425	1	Inverkeithing	1 0 0	5 0 0	1 0 0
1200	10	*Inverness G. & Wr.*	10 0 0	7 0 0	14 0 0
2400	5	Do., new shares.	1 5 0	7 0 0	2 0 0
		Inverury			
	10	Irvine	10 0 0	10 0 0	14 0 0
	2½	Do.	2 10 0	10 0 0	3 12 6
300	5	Jedburgh	5 0 0	7 10 0	7 10 0
		Johnstone, Paisley			
1300	1	Keith	1 0 0	5 0 0	0 11 0
600	5	Kelso	5 0 0	10 0 0	11 0 0
620	2	Kelsyth	2 0 0	5 0 0	2 0 0
950	1	Kennoway	1 0 0	5 0 0	1 1 0
1515	1	Kettle Freuchie & Kettle Bridge	1 0 0	5 0 0	5 0 0
600	25	Kilmarnock	25 0 0	7 10 0	30 0 0
600	25	Do., new shares.	7 10 0	7 10 0	
334	5	Kincardine	5 0 0	5 0 0	4 10 0
		Kinghorn			
		Kingskettle, Fife			
		Kinross			
1200	5	Kirkcaldy	5 0 0	10 0 0	10 10 0
320	5	Kircudbright	5 0 0	5 0 0	5 0 0
997	3	Kirkintulloch	3 0 0	6 13 4	3 7 0
		Kirkwall			
		Kirriemuir			
		Lanark			
3500	1	Lanark Conrs. (L.)	1 0 0	5 0 0	1 2 6
		Largo, near Leven			
280	8	Largs	8 0 0	7 10 0	8 10 0
1309	1	Lasswade	1 0 0		
177	5	Lauder	5 0 0	5 0 0	5 0 0
2000	1	Leslie, Fife	1 0 0	7 10 0	1 5 0
618	1	Lesmahago	1 0 0	6 0 0	1 0 0
		Leuchars			
906	5	Leven	5 0 0	7 0 0	5 6 8
100	10	Linlithgow	10 0 0	10 0 0	19 0 0
		Linton			
		Lochee, n. Dundee			
434	5	Lochgilphead (Ld.)	5 0 0	7 0 0	5 10 0
380	5	Lochwinnock	5 0 0	3 10 0	4 0 0
		Macduff			
1200	1	Markinch, Paisley	1 0 0	8 0 0	1 5 0
		Maryhill, n. Glasg.			
282	3	Mauchline	3 0 0	5 0 0	3 0 0
667	5	Maxwll T. & Dumf.	5 0 0	5 0 0	3 to 3½
423	5	Maybole, Ayrshire	5 0 0	4 10 0	5 0 0
		Meigle (L.) £700			
373	2	Melrose	2 0 0	7 10 0	2 10 0
718	2	Mid & East Calder	2 0 0		2 0 0
200	5	Moffat	5 0 0	5 0 0	
120	2½	Do., new shares.	2 10 0	5 0 0	
400	20	Montrose	20 0 0	10 0 0	35 0 0
		Muirkirk (L.) £1000			
800	5	Musselburgh	5 0 0	8 0 0	7 10 0
618	1	Nairn	1 0 0	5 0 0	1 0 0
		Neilston, n. Glasg.			
300	5	Newburgh, Fife	5 0 0	8 0 0	7 0 0
300	1	Do., new shares.	1 0 0	8 0 0	
1200	1	Newmilns	1 0 0	7 10 0	1 2 0
1300	1	Newport, Fife	1 0 0	5 0 0	1 0 0
		Newton-on-Ayre			
107	14½	Newton Stewart	14 10 0	5 0 0	14 10 0
300	5	N. Berwick, N.B.	5 0 0	5 0 0	7 10 0
		N. Queensferry			
245	5	Oban	5 0 0	7 10 0	5 7 6
1000	5	Peebles	5 0 0	6 0 0	5 0 0
500	2½	Do., new shares.	2 10 0	6 0 0	2 10 0
1000	25	Perth	25 0 0	8 0 0	32 0 0
3000	5	Perth, New	5 0 0	6 0 0	5 12 6
		Peterhead			
2000	1	Pettenween	1 0 0	6 0 0	1 1 0
2416	1	Pollokshaws	1 0 0	7 10 0	1 5 0
		Port Glasgow			
		Portobello			
		Portsoy			
200	5	Prestonpans	5 0 0	6 0 0	
		Renton, Dumbrtn.			
		Rothes			
1500	1½	Rutherglen	1 6 8	5 0 0	1 6 8
250	12	St. Andrew's	12 0 0	8 6 8	16 10 0
193	12	Do., new shares.	12 0 0	8 6 8	16 10 0
400	5	Saltcoats	5 0 0	7 10 0	6 0 0
936	1	Sanquhar	1 0 0	5 0 0	0 15 0
30	1	Do., preference	1 0 0	5 0 0	
400	5	Selkirk	5 0 0	7 10 0	7 10 0
		South Queensferry			
200	5	Stewarton	5 0 0	10 0 0	6 to 6½
7450	2	Stirling	2 0 0	8 0 0	3 10 6
2500	1	Stonehaven	1 0 0	6 5 0	1 5 0
1110	1	Stonehouse	1 0 0	7 10 0	13*s.* to 15*s.*
600	2½	Stornoway	2 10 0	8 0 0	3 10 0
500	5	Stranraer	5 0 0	7 10 0	6 0 0
588	2	Strathaven	2 0 0	8 0 0	3 0 0
643	2½	Thurso	2 10 0		2 10 0
		Tillicoultry			
		Turriff			
800	1	Tranent	1 0 0	5 0 0	1 0 0
		Troon			
		Tullibody			
2051	1	Wemyss & Buckhaven	1 0 0	6 0 0	1 0 0
		Wick			
665	5	Wigtown	5 0 0		
		IRELAND.			
1800	1	Antrim (Limited)	1 0 0		1 0
		Ardee			
300	10	Armagh (Lim.)	10 0 0	10 0 0	20 2 6
500	5	Athy (Limited)	4 0 0	6 0 0	5 0 0
		Balbriggan £1400.			
		Ballycastle			
600	5	Ballymena	5 0 0	15 0 0	5 10 0
184	10	Ballymoney	10 0 0	5 0 0	10 0 0
220	5	Ballynahinch (Ld.)	5 0 0	5 0 0	5 0 0
		Ballyshannon £2000			
		Bangor, Down			
700	80	*Belfast*	80 0 0	10 0 0	100 0 0
	20	Do., new shares.	20 0 0	10 0 0	25 0 0
1047	5	Carlow	5 0 0	5 0 0	5 0 0
600	5	Carrickfergus (Ld.)	5 0 0	8 0 0	6 5 0
197	10	Carrickmacross (L.)	10 0 0	5 0 0	10 0 0
300	10	Carrick-on-Suir	10 0 0	6 0 0	10 0 0
228	10	Castleblaney (Ld.)	10 0 0	5 0 0	10 0 0
400	5	Cavan (Limited)	5 0 0		5 0 0
		Clones (L.) £2000			
1300	5	Clonmel Consmrs.	5 0 0	5 0 0	5 0 0
240	5	Comber (Limited)	5 0 0	5 0 0	5 0 0
500	5	Cookstown	5 0 0	5 0 0	
		Coote Hill			
8000	5	Cork Conrs. (Lim.)	5 0 0	8 0 0	7 15 0
4000	5	Do., new shares	3 15 0	8 0 0	6 5 0
		Donaghadee £2000			
608	11	Drogheda	11 0 0	7 0 0	14 10 0
420	5½	Do., new shares	5 10 0	7 0 0	7 5 0
		Dublin Hibernian (*see* Untd. Gen.)			
19000	10	*Dublin Alliance*	8 0 0	7 10 0	12 15 0
220	25	Dundalk (Limited)	25 0 0	8 0 0	28 0 0
		Dundrum (L.) £2500			
200	10	Dungannon	10 0 0	7 10 0	12 10 0
871	5	*Downpatrick*	5 0 0	4 0 0	4 0 0
249	10	Ennis (Limited)	10 0 0		11 0 0
240	25	Galway	25 0 0	10 0 0	35 0 0
		Gorey (L.) £2000			
		Holywood (Lim.)			
		Keady			
400	10	Kilkenny (Limited)	10 0 0	7 0 0	11 0 0
		Killarney (L.) £3000			
		Kilrush			
		Kinsale (L.) £2000			
210	10	Larne (Limited)	10 0 0	5 0 0	10 0 0
150	10	Letterkenny (Ld.)	10 0 0		12 10 0
		Limerick (*see* U.G.)			
500	10	Lisburn (Limited)	8 0 0	10 0 0	10 0 0
300	5	Lismore	5 0 0	3 0 0	
100	5	Do., preference	3 0 0	5 0 0	
600	15	Londonderry	15 0 0	6 13 4	21 0 0
		Longford			
520	10	Lurgan	7 0 0	6 0 0	7 0 0
		Mallow			
2191	1	Maryborough (Ld.)	0 5 0		0 5 0
		Midleton			
		Monaghan			
2000	10	Navan	5 0 0	6 0 0	4 0 0
		Nenagh			
1000	5	Newry Conrs. (L.)	5 0 0		7½ to 7¾
450	5	Newtownards	5 0 0	7 0 0	6 5 0
200	10	Newtownlimavady	10 0 0	5 0 0	10 0 0
		Omagh	5 0 0	7 10 0	6 0
500	5	Portadown	20 0 0	5 0 0	21 0 0
125	20	Portaferry			
		Queenstown	10 0 0	5 0 0	
		Roscommon £2500.			
		Saintfield (L.) £1000			
500	10	Sligo	10 0 0	6 0 0	10 0 0
		Tuam (L.) £3000			
500	5	Tullamoore	5 0 0	3 10 0	5 0 0
240	5	Tullow	5 0 0		5 0 0
		Warrenpoint £3000			
1600	10	*Waterford*	10 0 0	6 0 0	12 0 0
300	10	Wicklow (Lim.)	10 0 0	6 0 0	10 0 0

The Gas-Works in the undermentioned towns belong to private individuals. Those marked * by the purchase of the shares in extinct companies:—

Aldershot.
Alford.
Barking*.
Beaufort (Brecon).
Beaumaris.
Billericay.
Blaydon, nr. Newcastle.
Bodmin.
Broadbottom.
Bungay.
Burntisland.
Chapel-en-le-Frith.
Chard.
Clare, Suffolk.
Crewe.
Crickhowell.
Dingwall.
Eccleshill, nr. Leeds.
Ellesmere.
Ely.
Enniscorthy.
Falmouth.
Farsley.
Fermoy.
Ferry Hill.
Fleetwood.
Goole.
Hadleigh.
Halstead.
Harleston.
Harrow-on-the-Hill.
Hayle.
Holbeach.
Holt.
Hunmanby.
King's Langley.
Knutsford.
Leiston (Suffolk).
Littleborough.
Lynn.
Market Deeping.
Mold Green, nr. Huddersfield.
Nantwich*.
Nettlebed.
Newport (I.W.).
New Ross.
Oakham*.
Parsonstown.
Penryn.
Peterborough.
Pontypool.
Redditch.
Rhyl.
St. Ives* (Hunts).
Seaham.
Sidmouth.
Sittingbourne.
Southall, Midlsex.
Spalding.
Stokesley.
Stowmarket.
Thirsk.
Tipperary.
Tiverton*.
Waltham Abbey.
Wem.
Wexford.
Whitchurch (Salop).
Whitby*.
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Beverley.
Birkenhead.
Blackpool.
Brighouse.
Burnley.
Burton-on-Trent.
Bury (Lanc.).
Carlisle.
Cashel.
Coleraine.
Dalton.
Darlington.
Devizes.
Doncaster.
Enniskillen.
Great Malvern.
Greenock.
Halifax.
Haverfordwest.
Keighley.
Kells (Meath).
Knaresborough.
Layton with Warbrick (Lanc.)
Leek.
Limerick Corporation Works.
Lytham (Lanc.).
Macclesfield.
Manchester.
Middlesborough.
Milton (Kent).
Newton (Lanc.)
Oldham.
Paisley.
Renfrew.
Richmond (Yorkshire).
Rochdale.
Ross.
Rothesay.
Salford.
Southport.
Sowerby Bridge.
Stockton-on-Tees.
Stockport.
Strabane.
Teignmouth.
Tenby.
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Trim (Meath).
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Walsall.
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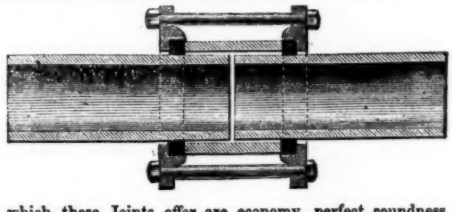

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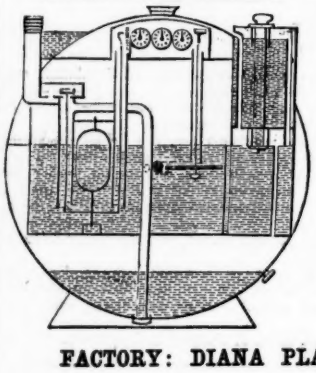

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CONSULTING GAS ENGINEER,
Inventor and Patentee
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GAS FIRES with INDESTRUCTIBLE FUEL,
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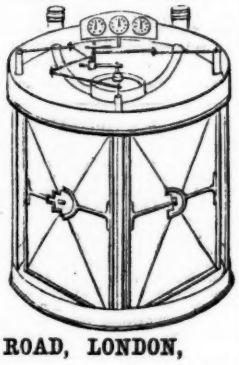

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A very severe illness, which confined me for some months to my bed, prevented me from entering into arrangements for the exhibition of my Patent Dry Gas-Meter, and other Patent Inventions in the present International Exhibition, all the space having been allotted before my recovery. I have, however, had the good fortune, through the medium of the Western Gas Company to have one of my Meters for 150 lights, and also one for 60 lights, supplied by Messrs. De Ville, and Co., Strand, at work in the supply of gas to the above building, where they give perfect satisfaction.

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Copy of Letter received from Messrs. SHOOLBRED *and* Co. *Tottenham Court Road.*

May 8, 1862.

Sirs,—In reply to your letter, respecting Gas-Meters manufactured by Mr. Defries, we can say there are 7 in our establishment; some have been in use 20 years, and they are all dry.

We have discontinued Water-Meters some years. Your letter was overlooked in the pressure of business.—We, are sirs, your obedient servants,

(Signed) J. SHOOLBRED and Co.
H. BOWEN.

To Messrs. A. W. Harris and Co., Dublin.

Copy received from Messrs. E. MOSES *and* SON, *Minories, Aldgate.*

May 9, 1862.

Dear Sir,—We have much pleasure in bearing testimony to the efficiency of your Patent Dry Gas-Meters, which we have had in our establishment as above several years, and are still working satisfactorily.—Yours, &c., (Signed) E. MOSES and SON.

Mr. N. Defries.

Copy of Letter received from Mr. T. W. COOKE, *gas-fitter, &c., 23, Mary Street, Hampstead Road.*

Dear Sir,—I have great pleasure in informing you, and which I think will be satisfactory for you to know, that I took down a 200-light Dry Meter, of your make, May 7, 1862, to be tested: this was supplied to the Chartered Gas Company, June 1855, No. 59,000, and fixed at Messrs. Firmins, White Horse Yard, Drury Lane, after the usual tests by the Government gas-inspector, as per Sales of Gas Act, it was found perfectly correct, and refixed the next day, and I think it also right to add that the Meter has undergone several severe tests while at work.—I remain yours truly,

(Signed) T. W. COOKE.

Mr. N. Defries, Euston Road.

THE ST. PANCRAS WORKHOUSE GAS-METERS.

To the Editor of THE ST. PANCRAS REPORTER.

Sir,—In justice to myself, and to the public at large, I beg to inform you that the 200-light gas-meter placed at the St. Pancras Workhouse gate, and the 100-light meter placed in the body of the house, were both manufactured by me, and supplied to the workhouse about four years ago. These two meters have been tested by the Government Inspector, at the office, St. Martin's Lane, and were reported upon in your issue of May 24, when Mr. Robson observed in the vestry that the Government Inspector said the 200-light meter was the largest and most correct meter he had ever tested. The above meters were also referred to in your issue of June 7, and reported as having been found perfectly correct.

The following is an exact copy extracted from the office-register of the inspector appointed under the "Sales of Gas Act" with refence to both meters:—

The 200-light meter, registering 1200 feet per hour, registered '45 too fast.

The 100-light meter, registering 600 feet per hour, registered '69 too slow.

As it is exceedingly difficult to produce a meter that shall register accurately and without variation for a very long time together, the "Sales of Gas Act" provides that where a meter registers 3 per cent. too slow (that is, in favour of the consumer), or 2 per cent. too fast, which, of course, is in favour of the gas company, such meter shall be deemed correct. You will see, therefore, that my meters after four years use have not, both together, varied more than 1¼ per cent., and that in favour of the consumer; and that this proves a degree of perfection in their construction which might well draw from the inspector the high encomium he bestowed upon them when tested by him.

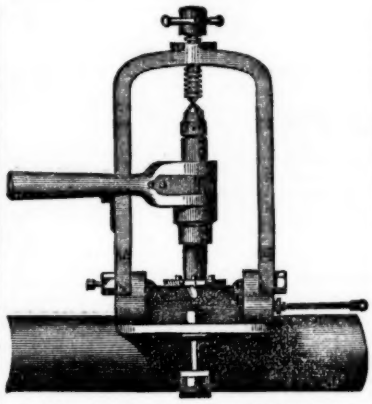
From some error of your reporter in your issue of the 24th of May, my name is given as the inspector instead of the manufacturer of the meters.

With regard to to the meter placed in the basement of the workhouse reported on in your issue of June 7, as registering over 5 per cent. too fast (that is, in favour of the gas company), it was not one of my make, and, I believe, it had only been in use about twelve months. Of course, it was tested by the gas company, as all the meters are, and, I presume, was correct when put down. I need not point out the vast superiority of my meter to that now referred to; suffice it to say, it has been returned to the gas company by the parish authorities, and a new 100-light meter of my manufacture purchased of me, and put down in its stead.

I am, Sir, yours respectfully,

June 26, 1862. N. DEFRIES.

SIMMONS'S
PATENT GAS AND WATER CONNECTOR.



This Machine is invaluable to Gas and Water Companies, Gas-Fitters, &c., being the only Connector whereby accidents can be prevented. It is simple in construction, economical in saving the escape of Gas, and can be worked by a labourer.

No. 1 size, to suit ¾ and 1 in. Services, £6. 6s. each.
„ 2 „ „ 2 and 1 „ „ £8. 8s. „
„ 3 „ „ 1½, 1½, & 2 in. „ £12. 12s. „

Including Rachet Brace, Drills, Taps, &c., complete.

MANUFACTURER,
J. COWDY,
BOND COURT, WALBROOK,
LONDON.

Connectors made for fixing on the ends of Mains, to prevent escape in course of laying.

GEORGE CUTLER & CO.,
GAS ENGINEERS, &c.,
London Gasholder and Boiler Works,
8, WHARF, WENLOCK ROAD, CITY ROAD, N.,
LONDON.

Rye, Nov. 12, 1860.

Dear Sirs,—I consider it incumbent on me to acquaint you that the alterations recently made on the Rye Gas-Works—viz., the addition of a NEWLY-IMPROVED WASHER, and other work for the Purification of Gas, executed by the experienced workmen under your able supervision—are perfectly satisfactory to the Company, and the Gas is now as pure as it can be made.

I am, dear Sirs, your obedient servant,
CHARLES THOMAS, Superintendent,
Rye Gas-Works.

Messrs. Cutler and Co.

DUPLEX GOVERNOR, for Gas-EXHAUSTER ENGINES.
D. LANE'S PATENT.

This Governor combines great delicacy with remarkable certainty of action. A pressure of one-tenth of an inch of water, operating on a diaphragm of 3 inches diameter, is sufficient to work the Regulating-Valve of an Engine of any power.

TESTIMONIALS.

Borough Engineer's Office, Town Hall
Halifax, March 29, 1862.

Dear Sir,—I have much pleasure in bearing my testimony to the efficiency of your Duplex Governor for regulating the speed of Gas-Exhausters.

The Governor has been perfectly self-acting, and has never given us one moment's thought, trouble, or expense. The engine-man has only to weight the tappets to the required vacuum, and the pressure-register paper never shows a greater variation than three-tenths in the twenty-four hours.

I can very confidently recommend the adoption of it to engineers and managers of gas-works making 50 million feet a year and upwards.

I am, dear Sir, yours faithfully,
G. W. STEVENSON.

Denny Lane, Esq., Cork Gas-Works,
Ireland.

Gas-Works, Cork, April 4, 1862.

Dear Sir,—Having for some time past had in use three of your newly-invented Regulators for governing the speed of Steam-Engines in connexion with Gas-Exhausters, I am glad that I am able to speak of this valuable machine in terms of the highest praise. I have had them applied, as you know, to high-pressure and condensing engines, with Beale's and also Anderson's Exhausters. In every case, this small and valuable instrument is thoroughly effective in regulating the speed of the Exhauster. No amount of care with the hand can equal its accuracy of action for the intended purpose.

Denny Lane, Esq. A. H. STILL, C.E.

An Illustrated Circular, explaining the operation of the Governor, can be obtained by application to D. LANE, 72, South Mall, CORK; and the Governor can be seen in London at the Offices of GEO. ANDERSON, Esq., C.E., 16, Adam Street, ADELPHI.

WHITEHOUSE and CO., Boiler and GASHOLDER MAKERS,
GLOBE PATENT TUBE WORKS,
WEDNESBURY,

Beg to draw the attention of Engineers and Managers of Gas Works to the superior quality of the Article they manufacture, both in respect of the iron employed, and the perfect manner in which it is welded; in proof of which they can refer to the testimonials of the most eminent Gas Engineers, and the experience of the principal of the large Gas Companies of the kingdom.

Orders promptly executed.

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Wrought and Cast Iron Pipes, Cast-Iron Retorts, and all kinds of Foundry Work necessary for Gas-Works. Fire-Bricks and Clay Retorts. Gas Coals of every description. Pig, Bar, and Plate Iron.

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DEEPDALE FIRE-CLAY & BRICK WORKS,
Near DUDLEY,

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FIRE-CLAY RETORTS,
TO MODEL OR DRAWING.

B. G. begs to call the attention of Gas Companies to his Fire-Clay Retorts, which have been used with great satisfaction in some of the largest Gas-Works in the Metropolis and many Provincial Towns in England.

References given, if required.

WALTER MABON, Engineer,
ARDWICK IRON WORKS, FAIRFIELD STREET,
MANCHESTER,
Manufacturer of
IRON TANKS for Gasholders, Railway Stations, &c.

GASHOLDERS.—Extensive premises at Gorton, solely for the manufacture of Gasholders, and other heavy Wrought-Iron Structures.

GAS APPARATUS.—W. M. has an extensive assortment of patterns for Purifiers from 4 feet to 15 feet square, also round ones from 4 feet to 10 feet diameter; Scrubbers, Condensers, Washers, Columns, Girders, and Tripod Patterns, suitable for Gasholders, from 10 feet to 150 feet diameter, either Single-lift or Telescope. Contracts for Gas-Works of any Magnitude. Designs, Specifications, and Estimates furnished.

WROUGHT and CAST IRON ROOFS for Railway Stations, Gas Works, Warehouses, and Sheds, prepared for Slates or for Corrugated Iron.

IRON HOUSES, either for Dwellings, Manufactories, or Public Buildings.

PIPES and VALVES, for Gas and Water, from 2 inches to 48 inches bore.

ANDERSON'S EXPERIMENTING LABORATORY
AND
GAS ENGINEERING OFFICES,
16, ADAM STREET, ADELPHI, W.C.
(Close to the Society of Arts.)

Mr. ANDERSON continues to Erect, or to supply the Drawings for his PATENT RETORT-SETTINGS. On this principle, three Ovens of Retorts are heated by one Coke and one Tar fire; and, for small Works, the principle is adapted to single Ovens in both cases, with a total absence of smoke, while the duration of the Retorts is from two to three years, and with great economy of fuel.

Mr. ANDERSON continues to supply his PATENT GAS-EXHAUSTER, together with Steam-Engines, &c., erected complete.

This is the most simple machine of the kind in use, being merely a double-action Pump, which any one can comprehend, and works for years without any repair.

Also, his PATENT FOUR-WAY VALVES. One of these valves does the work of three ordinary valves, when applied to Purifiers, Station-Meters, or other Gas Apparatus.

A workman cannot, by any possibility, make the mistake of shutting one passage without opening another; thus ensuring a constant flow of the gas.

All Racks, Pinions, Springs, and other delicate parts of ordinary valves, are in these valves abolished; the Connecting-pipes are also much simplified, and the cost reduced fully 50 per cent.

Also, his CONCENTRIC GOVERNOR, which stands in half the space of the ordinary Governor, and regulates the flow of Gas to the greatest nicety.

Mr. ANDERSON having five Gas-works on lease, besides being engineer to several others, has constant opportunities of perfecting his inventions before they are brought under public notice.

Mr. ANDERSON, in conjunction with Mr. STEVENS, of the Darlington Works, has recently erected and leased for a term of years, two Gas-Works of the Government, one at VICTORIA HOSPITAL, the other at the CAMP at ALDERSHOTT. At both places, the above designs are introduced, and cards to view may be had on application; as also, references to gentlemen who have used his apparatus for years.

Mr. ANDERSON may be consulted on all matters connected with the Manufacture of Gas, the Construction of new, or the reconstruction of old Works, Valuing the same, or obtaining parliamentary powers.

The Laboratory is being fitted up with apparatus for testing the chemical and photometrical properties of Coal-Gas, and also that of Meters, agreeably with the Act of Parliament. Gentlemen desirous of inquiring into such matters, are invited to pay a visit.

OBSERVATIONS on the Paper read by JOHN SHUTTLEWORTH, Esq., before the British Association at Manchester, on

THE MANCHESTER GAS-WORKS.

Reprinted from the JOURNAL OF GAS LIGHTING, WATER SUPPLY, AND SANITARY IMPROVEMENT.

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AVOIDED BY COATING WITH
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NB. A quantity of best Clay Retorts in stock, viz.—Circulars, 14 inches, 15 inches, 16 inches. D's, 16×12, 15×14, 20×16, 16×18.

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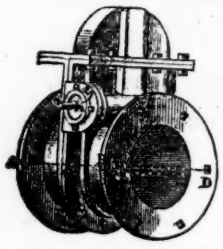

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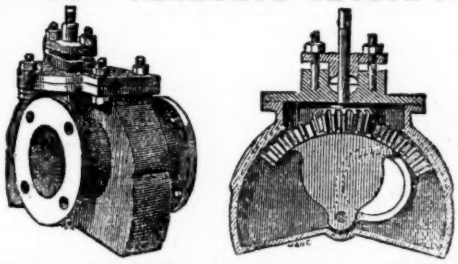

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All Meters warranted to comply with the Act of Parliament.

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AND FIRE GOODS IN GENERAL,

WOLVERHAMPTON.

Retort Mouthpieces, Bolts, Nuts, and every description of Wrought-Iron Work.

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MR. W. H. BENNETT, having had considerable experience in matters connected with Gas, Water, and Sanitary Improvement, begs to say that he continues to assist Inventors in the perfection of their designs, and to obtain for them PROVISIONAL PROTECTION, whereby their invention may be secured for Six Months; or LETTERS PATENT, which are granted for Fourteen Years.

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ROBERT MACLAREN and CO.,

EGLINTON FOUNDRY, GLASGOW,

Manufacturers of all sizes of Cast-Iron Main Pipes, by an improved Patent. General Ironfounders, Gas Engineers, and Wrought-Iron Tube Makers.

LESLIE'S PATENTS: Gas and Coke from common Coal, greatly increased in value.—60, Conduit Street, LONDON, W.

LESLIE'S PATENTS: Up to Forty Candle Gas.—60, Conduit Street, LONDON, W.

LESLIE'S PATENTS: Licenses for England, Scotland, and Ireland, the 86 Departments of France and Belgium.—60, Conduit Street, LONDON, W.

LESLIE'S PATENTS: The National Waste Heaps at Collieries UTILIZED for Gas purposes.—60, Conduit Street, LONDON, W.

ALFRED PENNY, Gas and CONSULTING ENGINEER,

WENLOCK IRON WORKS,

21 & 22, WHARF ROAD, CITY ROAD, LONDON.

Mr. PENNY having had a large experience in the construction, alteration, and management of Gas-Works, begs to inform the Directors of Gas Companies that he may be consulted on all matters appertaining thereto. He also manufactures Gasholders, Purifiers, and all the various apparatus used in Gas-Works, and keeps in stock Retorts and Mouthpieces, Socket-Pipes, Bends, Branches, T-pieces, &c. &c.

Plans, Specifications, and Estimates prepared.

GUEST & CHRIMES,

FOUNDRY AND BRASS-WORKS, ROTHERHAM,

AND

37, SOUTHAMPTON STREET, STRAND, LONDON,

(Late CROSLEY & CO.,)

GAS-METER MANUFACTURERS,

REMOVED, from 103, SOUTHWARK BRIDGE ROAD, LONDON, to

ROTHERHAM.

Gas-Meter Works, 103, Southwark Bridge Road,
London, April, 1862.

SIR,

I have the pleasure to inform you that I have ceased to be a gas-meter manufacturer, having disposed of my business to the well-known firm of Guest and Chrimes, of Rotherham, the makers of the Patent High-Pressure Water-Meter, and High-Pressure and Patent Fire-Cock, who will henceforth be the Sole Manufacturers of Crosley and Goldsmith's Patent Compensating Wet Gas-Meter.

The well-established reputation of that firm, as to quality of materials and workmanship of all goods supplied by them, is a sufficient guarantee that the character of these Meters will be maintained at the high standard of excellence which has always attached to them; and I have full confidence in asking for them a continuance of the patronage I have hitherto enjoyed from you.

My late manager, Mr. Lane, remains with Messrs. Guest and Chrimes, in the position he has held in these works since their establishment. Begging you to accept my best thanks for the favours I have received at your hands during my connexion with the business,

I am, Sir, yours most obediently, ISAAC BRIGGS.

Foundry and General Brass-Works, Rotherham, and 37, Southampton Street, Strand, London, W.C.
Rotherham, April 11, 1862.

We have the pleasure of informing you, as intimated in the annexed letter, that we have purchased the business of Mr. Isaac Briggs, of 103, Southwark Bridge Road, London, Manufacturer of Crosley and Goldsmith's Patent Compensating Gas-Meter, which it is our intention to remove to our works at Rotherham. The established character of the Meter for accuracy of registration needs no comment from us. It is especially constructed to meet all the requirements of the recently-imposed Sale of Gas Act, and upon such certain and simple principles as to insure correctness of measurement for long periods, without involving the necessity of constant care and attention on the part of the companies' inspectors and officers, as the large quantity of water contained in the surplus reservoir (except in extreme cases) will insure many months working. We have, therefore, the greatest confidence in soliciting your orders, feeling quite certain of their giving full satisfaction; and we would remark that, though apparently a high price, yet, when the quality of the workmanship and materials is taken into consideration, in addition to the large capacity of the Meter, and its other advantages, it will bear a comparison with any first-class article.

We would add that, although not enumerated, all the various articles made by the late firm will be manufactured by us, and under the same management as previously. We hope shortly to be in a position to submit to you a detailed description of the Meter, and all other articles we manufacture connected with Gas, its distribution and consumption, with prices of the same. Soliciting your commands,

We are, yours respectfully, GUEST & CHRIMES.

SOLE MANUFACTURERS OF

CROSLEY & GOLDSMITH'S

PATENT SELF-ADJUSTING & COMPENSATING GAS-METERS,

Which, by a simple arrangement of machinery, maintain a constant, true Water-Line.

N.B.—The Patent can be applied to any existing Wet Gas-Meters.

Manufacturers of EXPERIMENT METERS, GOVERNORS, MINUTE-CLOCKS, PHOTOMETERS, &c., &c., similar to those used by Mr. King, of Liverpool; and other Patterns.

Consumers' Governors; Inspectors' Pocket, and all other kinds of Pressure-Gauges; Thermometers;

STANDARD TESTING GASHOLDERS,

And Apparatus required under the Sales of Gas Act.

STATION-METERS & GOVERNORS; PRESSURE-REGISTERS & EXHAUSTER-REGULATORS.

Also, Manufacturers of LOWE'S PATENT MOTIVE-POWER METER, for situations where there is an inadequacy of pressure to supply the special requirements of certain consumers in low grounds during the day or night. Also,

MANUFACTURERS OF

BATEMAN AND MOORE'S, AND CHRIMES'

PATENT HYDRANTS, OR FIRECOCKS.

Improved Sluice-Cocks and Gas-Valves; Chrimes' Patent High-Pressure Single and Double Loose-Valve and Screw-Down Cocks; Pilbrows' Patent Water-Waste Preventer;

PATENT ABSOLUTE WATER-WASTE PREVENTER;

Siemens' Patent Balance Water-Meter; Bell and Chrimes' Patent Service-Box Valve; Improved Self-Acting and Pull Water-Closet;

ESKHOLME'S PATENT PNEUMATIC REGULATOR and VALVE-CLOSET.

Lowe's Patent Effluvia-Traps, Begg's Improved; Fire-Extinguishing Apparatus; Galvanized Iron Tubes and Fittings; *Gas Chandeliers, Brackets, and Fittings; Glass Chandeliers and Brackets.*

All the above articles may be seen on application to

THOMAS BEGGS, 37, Southampton Street, Strand, London; or to

GUEST and CHRIMES, Brass-Works, Rotherham,

Manufacturers of Plumbers' and Gas-Fitters' Brass-Work of every description.

Drawings, Descriptions, Prices, and Testimonials, will be forwarded per Post, on application as above.

THE ALPHA TUBE WORKS,

WALSALL, STAFFORDSHIRE. ESTABLISHED 1830.

LAMBERT, BROTHERS,

MANUFACTURERS OF

WROUGHT-IRON TUBES AND FITTINGS,

For Gas and High-pressure Water and Steam.

HENRY BALFOUR AND CO.,

ENGINEERS & IRONFOUNDERS.

DURIE FOUNDRY,

LEVEN, FIFE;

& 16, ADAM STREET, ADELPHI, LONDON, W.C.

Gas Engineers and Contractors for Gas and Water-Works; manufacturers of Steam Engines and Exhausters, Steam Boilers, Gasholders, Cast-Iron Tanks, Purifiers, Condensers, Iron Retorts, Gas and Water Pipes.

Plans, Specifications, and Estimate furnished for new, or for extensions and alterations on existing, Works.

TRUSS'S PATENT ELASTIC PIPE-JOINT,

FOR GAS AND WATER-MAINS, AND STEAM PIPING,

Is the only PERFECT joint that has ever been constructed, and supplies the long-felt desideratum, by allowing for the expansion and contraction of metals, and for oscillation and deflection, without impairing the joint. Gas Companies will effect an incalculable saving in adopting it, as compared with the present imperfect mode of jointing.

Drawings, Estimates, and every particular, furnished on application to

THOMAS SEAVILLE TRUSS, C.E., 53, GRACECHURCH STREET, LONDON, E.C.

COCKEY'S PATENT GAS-VALVES.

These Valves are formed of two Cast-Iron Cylinders, with segmental divisions, having the faces ground gas-tight—the upper Cylinder turning horizontally on the lower one.

The lower Cylinder has pipes from each division, communicating with the vessels to and from which the gas is to be passed. The upper Cylinder has corresponding divisions, so arranged as to direct the passage of gas to the different segmental divisions in the lower part, and, when it is turned on the face of the lower one, to alter the flow of gas from one vessel to another.

These Valves are adapted either for bye-passes; for connecting two, three, and four purifiers; or for the inlets of several Gasholders, and are in use for these purposes at the following Works:—

ALTON, HANTS.	CLEVEDON.	ENNISCORTHY.	NEWPORT, MONMOUTH.
BRIGHTON.	CHELTENHAM.	FROME.	REDRUTH.
BASINGSTOKE.	CHATTERIS.	GODALMING.	RYDE, ISLE OF WIGHT.
BLANDFORD.	CUCKFIELD.	HESSLE.	SALISBURY.
BARKING.	EASTBOURNE.	LANGPORT.	WARMINSTER.
CANTERBURY.	ELGIN.	MALVERN.	

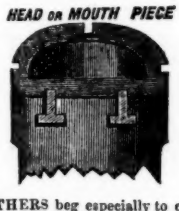
Besides many small private Gas-Works.

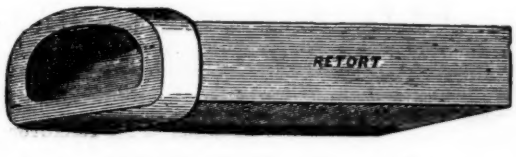
There are Two specimens at the International Exhibition in Class 10; one of them represents the Valve with its Index-Plate fixed for regulation, and the other shows the Valve open, exposing its passages.

IRON WORKS, FROME SELWOOD.

KING BROTHERS,

STOURBRIDGE FIRE-BRICK AND RETORT WORKS.





KING BROTHERS beg especially to call the attention of Gas Companies to the superiority of their Retorts, which are made from the celebrated STOURBRIDGE FIRE-CLAY. Mr. King has patented a Kiln for burning Retorts, by which Patent all Cold Air is excluded from the Kiln while burning, thus rendering them FREE FROM CRACKS AND CORRECT IN FORM. By great care in Manufacturing, combined with the advantages in burning, a VERY SMOOTH SURFACE is obtained, rendering them less liable to carbonize.

Retort Ovens, Fire-Bricks, Guards, Saddles, Rabbitted Burs, Flues, and Quarries, are all Manufactured of the same quality of Clay.

Every Retort and Brick is branded "King Brothers, Stourbridge."

FIRE-CLAY GAS RETORTS.

ESTABLISHED IN 1795.

JOSEPH CLIFF and SON,

WORTLEY FIRE-BRICK WORKS, near LEEDS,

Are Awarded the PRIZE MEDAL for Excellence of Material and Manufacture of Clay Retorts, July 11, 1862. Class X., No. 2259.

THESE RETORTS are unrivalled in excellence, being the BEST FINISHED INTERNALLY, and THE MOST CORRECT IN FORM, of any in the Kingdom. From the peculiar composition used in working up the face of the material, they are rendered unusually smooth, close, and FREE FROM SURFACE CRACKS, thus, in a great measure, preventing leakage and the adhesion of carbon to their interior surface.

To meet the yearly increasing demand of UPWARDS OF THIRTY SEASONS and to carry out the late improvements in the manufacture, the Premises have been re-erected and much enlarged, and Engineers may rely WITH CONFIDENCE on their orders being completed with a greater regard to despatch than by any other House.

THE WORKS ARE WELL SITUATED

For EXPORT from the Ports of LONDON, LIVERPOOL, HULL, MIDDLESBRO', HARTLEPOOL, and STOCKTON.

FIRE-BRICKS, LUMPS, GUARDS, TILES, AND CLAY OF THE SAME QUALITY.

M. B. NEWTON, London Agent, No. 4, Wharf, King's Cross Goods Station.

International Exhibition, 1862.

MESSRS.

CROLL, RAIT, AND CO.,

Manufacturers of Croll's Patent Improved

DRY GAS-METER,

Exhibited in Class XXXI. (B),

Have obtained the Medal for

"GOOD CONSTRUCTION AND SOUND WORKMANSHIP."

FACTORY:

CANAL BRIDGE, KINGSLAND ROAD, LONDON, N.E.

ALEXANDER WRIGHT,

55 and 55A, MILLBANK STREET, WESTMINSTER, S.W.,

MANUFACTURER OF

CONSUMERS' COMPENSATING & NON-COMPENSATING WET GAS-METERS,

Of the best material and workmanship, carefully adjusted to meet the requirements of the SALES OF GAS ACT.

STATION-METERS & GOVERNORS,

WRIGHT'S REGISTERING PRESSURE-GAUGE, EXHAUSTER REGISTER, & REGULATOR;

STANDARD TEST GASHOLDERS;

Consumers' Governors; Inspectors' Pocket, King's, and all other kinds of Pressure-Gauges; Thermometers for Condensers, Pressure Registers, &c., &c.

EXPERIMENTAL TESTING APPARATUS,

Employed by the best experimenters in this country and on the continent, and by the Gas Testers in the London districts.

PHOTOMETERS, SPECIFIC GRAVITY APPARATUS, BI-SULPHURET OF CARBON TEST, THOMPSON'S BROMINE AND HEATING POWER OF FUEL TESTS, IMPROVED ALKALIMETER, EXPERIMENTAL METERS AND GOVERNORS, MINUTE CLOCKS, &c., &c.

"Analysis of Gas for Practical Men," by A. WRIGHT, M. Inst. C.E., post-free for 13 Stamps. PRICE-LISTS ON APPLICATION.

JAMES MEACOCK,

PATENT DRY AND WET GAS-METER MANUFACTURER,

7, SNOW HILL, AND 16, WEST STREET, LONDON.

ESTABLISHED 1836.

J. M. invites attention to his Improvements in EXPERIMENTAL WET GAS-METERS, by which he renders impossible any Leakage from the Stuffing-Box.

These METERS are GUARANTEED to meet all the Requirements of the SALE OF GAS ACT

GOVERNORS, STATION-METERS, PHOTOMETERS,

EXPERIMENTAL TESTING GASHOLDERS, HIGH-PRESSURE GAUGES,

AND ALL APPARATUS IN USE AT THE GAS MANUFACTORY.

D. HULETT and CO., 55 and 56, HIGH HOLBORN, LONDON,

PATENTEES and MANUFACTURERS of the ONLY GOOD MERCURIAL GAS REGULATOR,

invite the attention of Gas Companies and the Trade generally to their Improved GAS-METERS, which they warrant equal to any in Quality, Workmanship, and Simplicity of Construction, and the only Meters from which Gas cannot be obtained without being duly registered.

MANUFACTURERS OF

GAS CHANDELIERS, GLASS LUSTRES, HALL LANTERNS, VESTIBULES, BRACKETS, PENDANTS;

DOUBLE CONE, ALBERT, SHADOWLESS, & EVERY DESCRIPTION OF BURNER, UNION JETS, BATSWINGS, ETC.;

IMPROVED FULL-WAY CARTER'S VALVES (much approved of);

GAS-STOVES, and every article connected with Gas Apparatus.

CAST & WROUGHT-IRON PIPE BLACK & GALVANIZED. COPPER. TIN, BRASS, & COMPOSITION TUBING.

D. HULETT'S IMPROVED SERVICE CLEANSER

for clearing out Mains, Services, and Interior Fittings—60s. net.

Boyle's Patent Silvered Glass Combination Reflectors and Outside Lanterns.

Sole Manufacturers of Church and Mann's Photometer.

Large Pattern Books, with every description of Gas-Fittings, Chandeliers, &c., with complete Book of Prices, 12s.

London: Printed by WILLIAM BOUGHTON KING (at the Office of Clayton and Co., 17, Bouverie Street, Fleet Street); and published by him at No. 11, Bolt Court, Fleet Street, in the City of London.—Tuesday, July 29, 1862.